WORKING LANDS
INVESTMENT PARTNERS, LLC

ENVIRONMENTAL CREDIT MARKETS: AN INVESTMENT PRIMER

INTRODUCTION

Environmental credits are an emerging asset class that encourages private sector investment in projects that restore wetland, water and habitat resources, or reduce air pollution. For the environmental credit developer, they provide a means to monetize and sell ecological values created by restoration activities. For the credit buyer, they provide a way to mitigate the environmental impacts of their business operations as required by law. In this way, environmental credit markets allow economic development to progress while ensuring the healthy ecological functioning of our nation's landscapes.

Although these markets have been operating for many years, recent efforts to standardize their rules and expand their scope have made environmental credits an increasingly attractive asset class for the institutional investment community. Both state and federal government agencies have recognized that traditional regulatory "command and control" structures to protect the environment can be costly and inefficient, while providing few incentives to actually achieve improvements in environmental quality. Over the last several years legislators have demonstrated an increased commitment to ensuring clear rules for environmental credit project development and trading. In response, these markets have grown exponentially and continue to generate keen interest from new market participants.

Investing in any emerging asset class requires an understanding of the returns and risk associated with each investment. First, there must be a sufficient level of structural market integrity to conduct transactions in an efficient and timely manner and to have an assurance that markets will not suddenly be fundamentally altered or eliminated. Second, the opportunities for returns must not only be attractive on an absolute basis but be commensurate with the associated risks. Third, the level and types of risks need to be clearly delineated with an ability to hedge some portion of them. Although some environmental credit markets are more nascent than others, today we believe the markets for environmental credits have reached a level of maturity that offers an ability to generate very attractive, risk adjusted, real returns. We expect this opportunity to be

long-tailed as markets continue to expand and credit demand increases as more entities see them as an efficient mechanism to comply with local, state and federal environmental laws.

To date, most investors in these markets have been local project developers or landowners who have pursued investment opportunities on an individual project basis, often on a smaller scale or on land already owned and managed for other purposes. Few investors have approached investing in these markets using traditional portfolio management tools which allow for greater diversification, steadier cash flow profiles, and greater flexibility in hedging investment risk. We believe there is significant scope for attractive financial returns in managing properties with a combination of environmental credit generation and sale alongside traditional income streams from such activities as timber and recreation management. We also believe that a portfolio of properties creates a more optimal investment structure by allowing diversification by geography, project type, ecosystem type, and end credit buyer. This helps to ensure that portfolio returns are not overly dependent on any one activity or credit project and have the potential to yield a more stable stream of returns.

From a traditional real estate perspective, environmental credits are beginning to change thinking about what is the "highest and best use" (HBU) of land. Historically, land's HBU has often been development, particularly as real estate investments have exceeded returns gained from timberland or other natural resource management. Yet, traditional real estate valuation methodologies structurally undervalue the embedded ecological values that lands generate. And historically there has been no mechanism for capturing these values for investors. Today, with the expansion of these new markets, environmental credits have the capacity to redefine the concept of HBU value and to assign more appropriate, financially attractive and realizable values to important ecological functions. They also reduce the need to rely on capital appreciation of the land at the end of the investment period as a driver of total return.

WHAT ARE ENVIRONMENTAL CREDITS

There are many types of credits, collectively referred to as "environmental" credits or "credits for ecosystem services". These include wetlands mitigation banking credits, habitat (or biodiversity) credits, water quality credits and, more recently popularized in the press, carbon credits. Although the current development and status of each market differs, all of them have similar philosophical and structural underpinnings. All are designed to minimize ecological degradation by requiring entities to mitigate their environmental impacts. Each of the markets represents a kind of "cap and trade system" in which activities that impair ecological values must offset the impact of their operations.

Clearly, in an ideal world, economic development would progress without environmental impacts. In reality, however, the need for roads and other transportation infrastructure, energy infrastructure (including renewable energy), housing and other amenities invariably leads to changes in landscapes that may have harmful impacts on flood control, water quality, wildlife and greenhouse gas emissions. Environmental credit markets are designed to allow these critical

economic and infrastructure investments to continue while ensuring there is no net loss in ecological functions and other natural resources in the process.

Each environmental credit market is different in size, scope, structure and level of market efficiency. Some are still under development which yields very different risk and return characteristics that must be considered in any environmental credit investment. Below is a brief overview of the current status of each market:

WETLANDS MITIGATION BANKING

In 1988, the Bush Administration endorsed the federal policy under the Clean Water Act that requires "no let loss" of wetlands in the United States. This law was enacted due to the key role wetlands play in flood attenuation, water quality, habitat and other important ecological functions. Activities that result in wetland impairments or losses are required to obtain permits through the 404 permitting program under the Clean Water Act which includes demonstrating that the activity will result in "no let loss" of wetlands. In 1990, the US Environmental Protection Agency and the Army Corps of Engineers clarified the rules for wetlands mitigation under the program and paved the way for mitigation bankers to offer third party credits to those required to comply with federal law.

Under this rule, compliance with the Clean Water Act first requires entities to *avoid* wetlands impacts. If impacts cannot be avoided, entities must *minimize* their impacts through improved project design and on-site steps to reduce impacts on wetlands and wetland functions. When this is deemed insufficient, the Army Corps of Engineers requires entities to "mitigate" their impacts through a variety of methods. Both public and private entities are required to mitigate their wetlands impacts. Typical buyers of wetlands mitigation credits include federal, state and municipal transportation agencies, energy transmission and distribution companies, other public works projects and private developers.

When the Clean Water Act was first passed, these entities tended to mitigate their own impacts, either on-site or through their own wetlands mitigation projects. In fact, up until 2003, 60% of all required wetlands mitigation in the US was implemented by the 404 permittees themselves.[1] Several studies have emerged over the last 15 years, however, which highlighted widespread failures in self-mitigation efforts as well as challenges in the ongoing regulatory oversight of these mitigation areas. As a result, support for third party wetland mitigation banks began to increase.

Figure 1: Growth of Wetland Mitigation Banking Market 1992-2005[2]

[1] Environmental Law Institute, *2005 Status Report on Compensatory Mitigation in the United States*, Washington DC, April 2006, 110p.

[2] Ibid, p.2.

Since the program's inception, there has been significant growth in wetland mitigation banking activities. Today, wetland mitigation banks can be found in 31 states across the US although the majority of banks are concentrated in the southeast. Part of this is due to the significant amount wetland acreage in the southeast coupled with high rates of economic growth in the region which have precipitated the need for offset credits. However, this trend is also due to the fact that historically this program was not universally and consistently implemented across the country. In the past, state and local regulatory agencies exerted a strong influence on the rules surrounding wetlands mitigation banking within their jurisdiction. Not surprisingly, this created a significant amount of market heterogeneity. This also increased regulatory risk for wetlands mitigation credit developers given the wide latitude local agencies had in overseeing the program and adding additional requirements beyond those stipulated in the 404 permitting program.

In 2004, the EPA and the Corps conducted a full audit of the program, its rules and their implementation as well as a review of wetlands mitigation activity and its successes and failures to date. As a result of this review, a new rule was put in place in June, 2008 which has dramatically improved the 404 permitting process by increasing clarity in the rules and how they are implemented as well as standardizing the program and increasing the consistency in the way projects are evaluated and approved. The new rule also applies formal performance benchmarks for project developers and oversight agencies to create a more streamlined process with greater accountability. This has not only reduced inefficiencies in the regulatory process, but has also created a more performance based market which favors private developers having strong expertise in wetlands restoration and mitigation projects.

Figure 2: Types of Mitigation Banks as of 2005[3]

How the Market Operates.

Projects that result in the discharge of dredged or fill material into US waters are generally required to obtain a 404 permit under the Federal Clean Water Act. The US Army Corps of Engineers (USACE) oversees this program. The USACE quantifies the loss in wetland acreage or functioning based on the proposed activity. Entities seeking to offset their impacts through wetlands mitigation credits are required to compensate for losses which can be determined by acreage or wetland function, or both.

Central to this program is the requirement that entities must offset their impacts within the same general hydrological area as the permitted activity. As a result, a developer in Florida cannot purchase wetland mitigation credits in Ohio to offset its activities in Florida. This is to ensure

[3] Ibid, p.7.

that wetlands and hydrological functioning are restored and protected where damage is occurring so that the integrity of the overall watershed is preserved.

For the project developer, credits are awarded on the basis of ecological "uplift" (or improvement) they have achieved on the site through restoration efforts. It is not enough for a wetland mitigation banker to simply purchase a wetland and expect to sell credits. The project must *increase* wetland functioning since the credits are used to offset environmental impacts that *decrease* wetland functioning/acreage elsewhere. Restoration projects are evaluated on a number of formally stated hydrological, vegetative, and habitat criteria.

Since wetlands differ greatly with respect to size, function, location, and the services they provide, one acre of restored wetland may not always translate into the functional equivalent of another wetland acre lost. As a result, the wetland crediting process sets a "wetland mitigation ratio" which determines the number of acres a wetland mitigation bank (seller) can offer to offset one acre of wetland loss (buyer). For example, a 4:1 ratio means that four acres in a wetland mitigation banking project are used to offset one acre of damage, i.e. create one credit. The credit ratio is designed to ensure there is an "in kind" transfer of wetland functions between buyer and seller (not simply acreage) in order to ensure there is truly "no net loss" of wetland function. The credit ratio also helps to ensure success of the overall goals of wetland protection by creating a buffer against project failure. Activities which restore significant wetland functions are given more favorable (lower) ratios than those which merely enhance already functioning wetlands. In addition, approval is given to those banks which are developed on land that is deemed suitable for restoration. Upland areas, or areas which are not traditionally "wet", or *hydric,* are not considered to be suitable acreage for wetlands mitigation projects. Instead, the Corps requires that wetlands mitigation efforts take place on land that under "natural" circumstances would lend itself to a wetland state. In this way, wetland restoration efforts give nature a jump start in moving toward a landscape that is more likely to be self sustaining over time.

Because credits must be purchased where impacts are taking place, market supply and demand for wetland mitigation credits is regionally determined. Wetland mitigation project developers are given a "service territory" within which they can sell their credits; similarly, buyers must also purchase offset credits in their service territory. These areas may be based on county lines, watersheds, drainage basins or some combination thereof. Understanding the underlying supply and demand potential for any given service territory is the key to successful credit generation and sale. This requires a research process to locate and map expected upcoming projects needing mitigation in order to site optimal properties for generating credit supply. Since many projects requiring wetlands mitigation also engage in other activities requiring permits (including public infrastructure projects) tracking these permits can be an effective way of gauging upcoming demand.

The process for creating wetland mitigation credits has improved over the last few years, particularly with the implementation of the new rule in 2008. Project developers first submit a

Prospectus to the Army Corps of Engineers to initiate the approval process. The Prospectus also serves as the basis for establishing a "mitigation banking instrument" (MBI) which is a formal document outlining the physical and legal characteristics of the establishment, operation and maintenance of the wetland mitigation bank. Once the MBI has been accepted, the regulatory review team typically allows a portion of the credits to be "released" for sale. This is an important part of project development which influences returns from a wetland mitigation banking project. Early sales of pre-released credits can be used to fund the restoration work required for the project thus helping to lower the overall project costs. Subsequent credit releases are based on completing physical and biological improvements to the site and other benchmarks such as plantings surviving through an entire growing season.

There is currently no secondary market for wetland mitigation credits. Credits are traded between buyer and seller and often transact through a local broker who brings together supply and demand for a fee. In some cases, credits may be "presold" to buyers, particularly in areas that are supply constrained where buyers may want to lock in their mitigation needs as credits become available. In this case, discounts for presold credits are negotiated between buyer and seller. This gives the seller increased cash flows upfront while allowing the buyer to ensure its environmental impacts have been mitigated so that the permitted activity can commence on schedule.

Once the mitigation bank is sold out of all credits, the property remains a protected wetland into perpetuity through a conservation easement that is placed on the property at the outset of the project. Typically, these properties are then sold to individuals or organizations seeking recreational use of the property. While easements may allow for some modest structures on portions of the property, they are designed to protect the long term ecological value of the bank by precluding traditional residential or commercial development, or other activities which would compromise the wetlands' ecological function. Typically, the returns generated from the wetland mitigation banking projects are attractive enough that the final land sale is not a key driver of overall investment performance.

Of all the environmental credit markets, wetlands mitigation banking is the most developed and has the longest track record. Although there is some economic cyclicality associated with market pricing for credits, particularly in those regions where credit demand is driven by private real estate development, the increasing use of third party mitigation banks by public agencies (particularly in transportation) as well as by developers of energy infrastructure has created attractive secular growth potential for the market. These projects tend to be long tailed and less tied to traditional real estate cycles, allowing wetland mitigation banking developers to build a portfolio of banks in diverse markets which are not overly reliant on one underlying driver of credit demand.

CONSERVATION BANKING: CREDITS FOR HABITAT/BIODIVERSITY

The market for habitat credits was created under the Federal Endangered Species Act as well as state supported programs for the creation of habitat banks, often called "conservation banks". Like the wetlands mitigation market created under the Clean Water Act, habitat credit markets are designed to restore, enhance or preserve habitat for rare species to offset compromises in wildlife habitat due to economic activities (i.e. road building, energy infrastructure, etc.).

Unlike mitigation banking, however, habitat banking has developed largely out of state led initiatives to date, with state rules and programs covering compliance with both state and federal law. The first state program was put in place in California in 1995. Since state based habitat banking programs were more formal and often clearer and more developed than federal guidelines, the federal governmental historically allowed compliance with the Federal Endangered Species Act to be met through such state programs. Because of CA's historical legacy as a model for habitat banking, it is not surprising that the state has the largest number of habitat banks in the nation.

In 2003, however, the federal government issued guidelines on the use of habitat banks. These guidelines sought to ensure consistency of rules and clarity for landowners and project developers while recognizing that local variations must continue due to the heterogeneity of wildlife habitat across the country as well as the diversity in type and needs of rare species. Today, there are more than 75 habitat banks administered by the US Fish & Wildlife Service in addition to the myriad of banks created under state programs.

Similar to wetlands mitigation, markets for habitat banking are locally based. The service area is driven by the conservation needs of the particular species. Preference is given to those restoration projects which are located in larger, undeveloped areas to ensure that encroachment and fragmentation of landscapes from development do not unduly pressure lands set aside for habitat banks. This is also due to the fact that small, discrete habitat restoration efforts are often inadequate to support the ongoing health and population growth of a threatened species. There must be adequate sites for nesting, reproduction, migration, and food production. Like wetland mitigation banking projects, habitat/conservation banks must be placed under a conservation easement to ensure the long term protection of the property from development.

Habitat banks are awarded credits based on habitat recovery dictated by acreage, species population or some combination of both. Unlike wetlands mitigation credits, however, the federal program for habitat banking requires that the goals of the bank be reached prior to any credit release or sale. In this way, there is no pre-release of credits to fund the investment required in habitat restoration. However, the capital investment required for constructing habitat banks is often much lower than that for wetland mitigation banking. On the positive side, however, banks that achieve high performance (in number of nesting pairs or family groups) may

receive greater numbers of credits during the project life. Thus, there is a commensurate reward for performance in successfully executing habitat recovery projects.

Credits are awarded based on specific biological criteria required to support a species. In some cases, habitat banks may be created to cover more than one federally listed species. In these cases, however, credits are allocated to each specific species and cannot be sold "twice" to meet the mitigation requirements for multiple species. Like wetlands mitigation credits, habitat credit prices are determined by local supply and demand.

WATER QUALITY CREDITS

Markets for water quality credits are less developed but are rapidly gaining national support. This stems from the EPA data which shows that more than half of the US water bodies are currently impaired for their designated use—i.e. they are more polluted than they should be under the law. Since water quality is a critical public health issue, legislators and policymakers are backing market based mechanisms to improve the nation's water resources and give polluters an incentive to reduce their impacts. Support for water quality trading is clearly demonstrated in a report by the World Resources Institute which estimates that of the 57 water quality trading programs worldwide in 2008 (including active markets and those under development), all but six were located in the United States.[4] In 2003, the US EPA issued its Water Quality Trading Policy which encourages watershed based trading programs and provides federal funding for the development of trading platforms. Today there are 13 statewide water quality trading programs that include bilateral transactions, clearinghouses and exchanges.

Water quality impairments result from two broad categories of pollution: point and nonpoint sources. Point sources of water pollution emanate from single sources such as a sewage treatment plant or an industrial facility. Nonpoint sources are more diffuse and include agricultural runoff, road runoff or other polluted runoff from urbanized areas. Although one point source has been allowed to trade its "right to discharge" with another point source for some time, the federal government is keen to ensure that nonpoint sources are also included in trading schemes. The reason for this is that much of the water pollution comes from the discharge of nutrients (primarily nitrogen and phosphorous), and many of these discharges come from farms, cities and other non-point sources. Excess nutrient loading has led to increasing instances of eutrophication and hypoxia—so called "dead zones"—in US waters. When nutrients are added to an aquatic ecosystem, primary productivity in the water increases. This can cause increased algae and algal blooms. Algal blooms not only reduce water transparency and lead to discoloration, smell and other water treatment challenges, but can also be toxic to plants and aquatic organisms, resulting widespread fish kills, not to mention negative impacts on human health. Although nutrients are found in effluent discharge from sewage treatment systems, the majority of nutrient deposition into US waterways comes from nonpoint sources, primarily

[4] World Resources Institute, *Water Quality Programs: An International Overview*, Washington DC, March, 2009, 16p.

agricultural sites. Studies estimate that 82% of the nitrogen deposition and 84% of the phosphorous deposition into US waterways comes from nonpoint sources, largely due to heavy fertilizer use from agricultural operations[5]. Thus, regulatory agencies have insisted that water quality trading mechanisms include both point and nonpoint sources of pollution to meet overall goals in water quality improvement. Today, over 70% of water quality trading programs allow point sources of pollution to trade credits with nonpoint sources.

Figure 3: Statewide Water Quality Trading Programs (2008)[6]

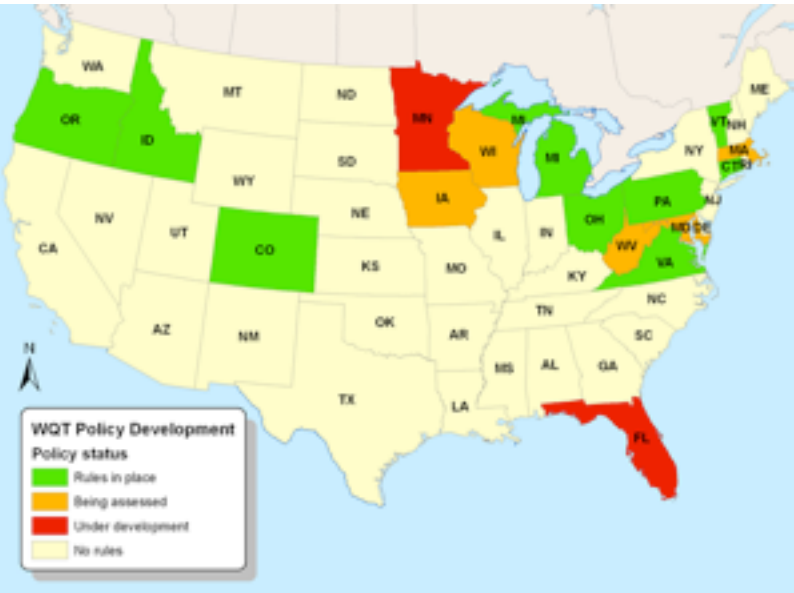
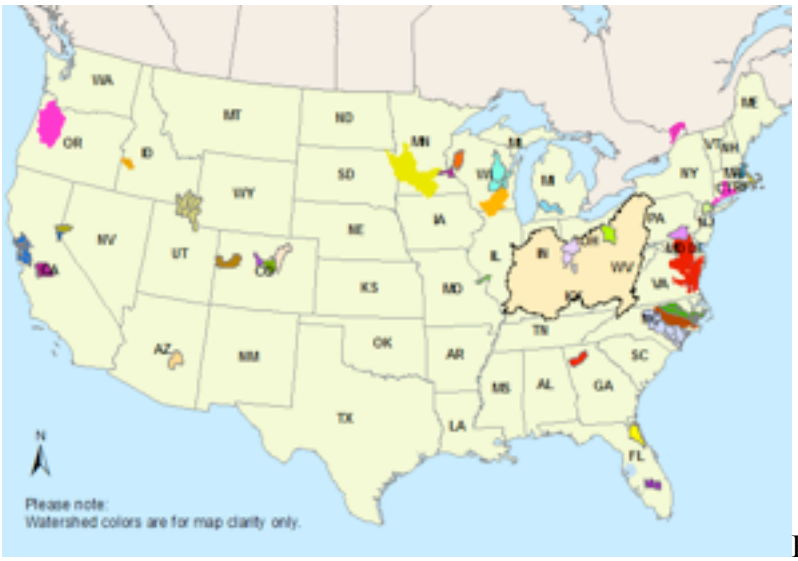


Figure 4: Watershed Based Water Quality Trading Programs (2008)[7]

[5] Ibid, p.2.

[6] Environmental Trading Network, 2009.

[7] Environmental Trading Network, 2009.



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How the Market Operates.

The Clean Water Act requires enforcement of "total maximum daily load" (TMDL) requirements for waters that are more polluted than the law allows ("impaired" waters). A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards. Under a water quality trading scheme, maximum pollutant loads are allocated to both point and nonpoint sources. This creates an effective "cap" on allowable discharges/pollution.

Credits can be generated when a project or source results in a net reduction of nutrient loading into the system. For agricultural sites, this can be achieved through no-till or conservation till practices (which lower or eliminate fertilizer use), use of cover crops (to reduce nutrient runoff), planting of streamside buffers (to better trap nutrients from being deposited into waterways) and other activities. Agricultural sites are measured at the outset of the credit project to establish a baseline level of nutrient loading into the waterway. Projects are monitored to determine whether water quality improvements have been achieved; credits are awarded based on both realized and expected reductions in nutrient loading subject to project approval.

Tradable credits for water quality are based in "units of pollution". Thus, an entity wishing to discharge a unit of phosphorous regulated under a TMDL cap would need to purchase credits from sellers that have decreased phosphorous deposition into the same waterway. However, sellers cannot simply purchase one unit of pollution to offset one unit of pollution discharged. Water quality crediting is subject to a trading ratio, similar to wetlands mitigation banking. Thus, a landowner who seeks to generate tradable water quality credits may be issued a 2:1 credit ratio, whereby a buyer must purchase two units of the particular pollutant in order to discharge one unit. This helps to ensure that the net impact is positive for overall water quality. This does not typically overburden the seller, however. Water quality markets recognize that the

cost of pollution abatement is higher for some entities (i.e. water treatment plants) and more difficult to implement than others (i.e. farms). Yet both entities are required to comply with the same water quality regulations. Through a tradable crediting system, water quality improvements are achieved by the lower cost producers; this allows water quality goals to be met at an overall lower cost to society.

Credit ratios are driven by a variety of factors including location and type. For example, upstream credits may generate lower water quality benefits than projects closer to areas of water quality concern. This is due to the fact that natural processes often dilute the negative effects of a pollutant as it moves downstream. In addition, projects to improve water quality and reduce nutrient loading are subject to a variety of environmental factors including weather which can play a role in the ultimate levels of pollutions deposited. Thus, credit ratios serve as a buffer to protect and hedge against environmental variability in water quality trading projects thereby preserving the structural integrity of the trading system's underlying goals.

Although water quality trading markets have the capacity to grow significantly, today the market remains highly fragmented and is overseen by local regulatory authorities with large variability in rules and transacting mechanisms. These markets have not been in place long enough to demonstrate a long term track record. In addition, trading rules are still under development. Since the current market for water quality trading is more nascent than other environmental credit markets, it is important that water quality trading projects are combined with other environmental credit and revenue generating activities in order to ensure long term, stable returns and to reduce portfolio risk. However, we expect that this market has the capacity to be one of the most attractive investment areas in the next few years due to strong commitment by legislators, regulatory agencies, landowners and entities required to comply with laws governing discharge limits and water quality standards.

CARBON MARKETS

Although the carbon market is the least developed of all environmental credit markets in the US, it is probably the most widely known and most heavily covered in the media. Currently, the US Congress is debating federal legislation to cap greenhouse gas (GHG) emissions which would include allowance for trading carbon credits to meet GHG reduction goals. Today, however, most US carbon credit transactions take place in voluntary markets (with the exception of small regional cap and trade schemes). Outside the US, carbon markets are much more developed. The largest carbon market was established under the Kyoto Protocol in 1997, which the US did not ratify.

Figure 5: Global Carbon Markets[8]

[8] Ecosystem Marketplace and New Carbon Finance, *Fortifying the Foundation: State of the Voluntary Carbon Markets 2009*, Washington DC, May 20, 2009, p.6.

	mtCO2e		US$ Million	
	2007 Volume	2008 Volume	2007 $ Value	2008 $ Value
Voluntary OTC	43.1	54.0	$262.9	$396.7
Chicago Climate Exchange	22.9	69.2	$72.4	$306.7
Other Exchanges	0.0	0.2	$0.0	$1.3
TOTAL VOLUNTARY MARKETS	66.0	123.4	$335.3	$704.8
Kyoto: EU ETS (Allowances)	2,061.0	2,982.0	$50,097.0	$94,971.7
Kyoto: Project Based Credits	832.0	1,030.7	$6,376.0	$24,042.5
Kyoto AAU	0.0	16.0	$0.0	$177.1
New South Wales	25.0	30.6	$224.0	$151.9
RGGI (US)	0.0	27.4	$0.0	$108.9
Alberta SGER	1.5	3.3	$13.7	$31.3
TOTAL REGULATED MARKETS	2,919.5	4,090.0	$56,710.7	$119,483.4
TOTAL GLOBAL MARKETS	2,985.5	4,213.4	$57,046.0	$120,188.2

Carbon markets generally include two types of credits: *allowances* and *offsets*. Allowances are pieces of paper issued by a government that grant an entity the right to emit one metric ton of CO2 equivalent. They are released to the market either through an auction or allocation process. Entities that wish to emit beyond their allowances have two options. They must either (1) buy additional allowances from another emitter (as with water quality trading between point sources) or (2) buy *offset* credits, which are credits generated by projects that sequester carbon and/or reduce carbon emissions below a predetermined baseline. Carbon credits in the US are now project based offset credits and transact through bilateral contracts, registries, or exchange markets.

Entities seeking to generate carbon offset credits from a particular project must first pass through several hurdles designed to prove that emissions are actually being reduced. First, projects must demonstrate *additionality* whereby the carbon sequestered by the project (or the carbon emission avoided by the project) is over and above what would have occurred under "business as usual". This is to ensure that offset credits really do function as real, verifiable carbon reductions offsetting buyer emissions. Secondly, a carbon project must demonstrate that there is no *leakage*. Leakage occurs when an activity to sequester carbon or avoid a carbon emission simply diverts a carbon emitting activity to another area (i.e. timber harvesting shifts from protected property to another property that is not protected). Thirdly, carbon projects must demonstrate that the carbon benefits are *permanent* so that the underlying asset has long term credibility. Carbon projects must be verified by a third party entity and are subject to regular monitoring and auditing to ensure ongoing compliance as well as delivery of expected carbon values.

While the voluntary carbon offset markets in the US today all ascribe to the basic fundamental structure described above, there is significant variation in how these rules are implemented. There are currently no national standards for meeting additionality, leakage and permanence

requirements. In addition, the levels of project oversight differ by market as well as the accounting methodology used in carbon crediting. This leads to significant and often unpredictable variations in capital investment required, timing of cash flows from carbon sales, and ongoing transaction costs. Furthermore, there is still no nationally accepted protocol for which types of carbon projects are allowed to generate offsets that have value in compliance markets. Finally, since ultimately all US carbon offset transactions are voluntary, there is no assurance that any projects developed to date will be allowed to roll into a federally mandated system.

From an investment perspective, it is difficult to justify capital commitments today to a program that is so costly and uncertain. To be sure, there are significant opportunities for investment returns in carbon if and when the US passes federal cap and trade legislation and if a successor market is put in place internationally when the Kyoto Protocol expires in 2012. We continue to monitor market development and seek to retain the option to develop carbon projects at some point in the future on the lands that we acquire.

RISKS IN ENVIRONMENTAL CREDIT MARKETS

Although environmental credits have been developing rapidly over the last several years, like any investment, they are not without risk. Some of these risks are more easily managed than others. We believe that a diversified portfolio of environmental credit projects supported by traditional income streams from timber, recreation and other activities can provide attractive absolute returns while hedging risks associated with any one environmental credit project. Typical risks in environmental credit project development are described below:

Regulatory Risk: Credits for wetlands, water quality, habitat and carbon are sanctioned by legislation and administered by regulatory agencies. As a result, there is regulatory risk which may be at a state, federal or local level. Regulatory risks include risks that projects may not be approved, nuances in how the rules are implemented at the local regulatory agency, inefficiencies created by the time it takes to gain approval, and the risk of regulatory changes during the life of a project. While these risks were quite high during the 1990s and into the current decade, regulators have increasingly recognized that private capital will not flow to environmental credit markets unless the risk and return hurdles of financially oriented investors are met. Recently, increased federal support and endorsement of credit programs, efforts to standardize and streamline rules, as well as recent program and performance audits by federal and state agencies, has led to greater transparency and consistency in rules and their application as well as improved the regulators' own actions during the approval process. Performance benchmarks for project developers and regulators are now more clearly defined which has strengthened the market and encouraged greater participation by private capital.

Of course, regulatory risk varies by credit market. It is lowest for wetlands mitigation banking and habitat banking due to their relatively maturity, and much higher for water quality where

rules are still be developed. Regulatory risks for carbon markets are highest, particularly since there is no federally mandated cap and trade market currently in the US.

Delivery Risk: Delivery failure occurs when restoration projects fail to generate the ecological values underlying the environmental credit. If a project fails to meet ecological hurdles, fewer or no credits may be awarded. This can occur as a result of natural events, such as storms or other disturbances, as well as higher than expected mortality of plantings and other restoration work. Delivery failure can also occur from poor project implementation and management. Regulators recognize that natural disturbances on the land are a normal part of any land management activity despite best efforts. Many credit markets include a buffer in credit generation process to offset potential losses in ecological values from natural events (see discussion of "credit ratios" earlier in the report). More often than not, natural disturbances simply increase the time takes to create salable environmental credits. For the project manager, natural disturbance risk can be managed through diversification although it will never be eliminated.

Delivery failure from project development risk, on the other hand, can be managed through best management practices on the ground. Historically, there has been a strong correlation between project failure and the type of project developer. Small, opportunistic project developers may lack the skills, funding, and access to high quality contractors required to execute successful restoration efforts on a consistent basis. As the ecological criteria for project approval has tightened over the years, this has begun to squeeze out marginal players which has improved the competitive landscape for institutional quality projects.

Economic/Market Risk: Like any financial transaction, trading environmental credits requires a buyer and a seller. While supply is driven by the amount of "mitigatable acreage" or acreage suitable for environmental credit development, demand is driven by the needs of credit buyers in a variety of industries or government agencies. In areas where credit demand is driven by real estate development (such as Florida), demand can be quite economically cyclical, while in other regions demand may be driven by the energy sector (gas transmission lines / solar farms) or by public works projects (roads, airports, etc.). Some of this risk can be hedged through a diversified portfolio of projects so that no one source of credit demand drives investment returns. While there will likely remain some degree of economic cyclicality in aggregate credit demand, we expect that incremental investments in energy and transportation infrastructure will drive greater secular demand over the next several years.

Economic risk can be managed not only through traditional portfolio diversification but through comprehensive due diligence of local supply and demand dynamics. Our research team creates detailed maps defining service territories, suitable acreage (based on ecological features), proposed projects requiring mitigation, and the location of existing competitors. This helps us to locate suitable sites for investment and to clearly articulate our expected environmental credit "exit strategy" so that we minimize the holding period of unsold credits.

Many projects developers have historically taken a more opportunistic approach to site selection rather than a systematic, demand driven approach. We believe it is more advantageous to prioritize investments across the country based on demand for credits rather than seek traditional land investments (i.e. timberland) that simply consider environmental credits as a "side activity".

New Market Risk: New asset classes can be fraught with inefficiencies. Some of these inefficiencies create investment opportunities, such as market fragmentation or undervalued or mis-valued assets. Since traditional investment strategies in land do not typically factor in financial returns from environmental credits, we believe there are significant areas of valuation disconnect simply because this land use is not considered. We also believe this alters the competitive landscape for land acquisitions. Since we do not use the same investment criteria as traditional real estate or timberland investors, we often find undervalued opportunities that have fallen under the radar screen of those using more traditional strategies.

Other inefficiencies create risks which may preclude institutional investor interest. These include inadequate rules governing transactions and the assets underlying those transactions, shenanigans by market participants hoping to exploit loopholes from ill-defined market structures or inadequate market oversight, and the general "wild west" character of nascent emerging markets. Each environmental credit market today has different levels of new market risk which will impact investment risk and return. In more developed environmental credit markets, such as wetlands mitigation banking, we believe the market is sufficiently mature to create significant return opportunities from its emerging nature without the significant challenges from unwanted inefficiencies. On the other hand, the carbon markets still reflect significant market inefficiencies that make it less attractive to financially oriented investors.

As these markets continue to develop, we expect that the opportunities they offer will increase while the structural inefficiencies will continue to decline. We believe that today is the optimal time to enter these markets. Competition has not yet caused deflationary pressure on investment returns. In fact, successful projects have the capacity to yield very attractive absolute rates of return. A portfolio of diverse environmental credit projects can create a balanced exposure to more developed markets while retaining option values to participate in environmental credit markets just emerging. And since these environmental credit projects are ultimately backed by a physical asset (the land itself) it provides some amount of valuation floor while offering steady income from timber, recreation, and other land based activities.

October, 2009