



Opportunities in Conservation Finance: Forest Carbon and Mitigation Banking Markets

Sector Overview

Disclaimer

© New Forests 2016. This publication is the property of New Forests. This material may not be reproduced or used in any form or medium without express written permission.

The information contained in this publication is of a general nature and is intended for discussion purposes only. The information does not constitute financial product advice or provide a recommendation to enter into any investment. This presentation has been prepared without taking account of any person's objectives, financial situation or needs. This is not an offer to buy or sell, nor a solicitation of an offer to buy or sell any security or other financial instrument. Past performance is not a guide to future performance. Past performance is not a reliable indicator of future performance. You should consider obtaining independent professional advice before making any financial decisions. The terms set forth herein are based on information obtained from sources that New Forests believes to be reliable, but New Forests makes no representations as to, and accepts no responsibility or liability for, the accuracy, reliability or completeness of the information. Except insofar as liability under any statute cannot be excluded, New Forests, including all companies within the New Forests group, and all directors, employees and consultants, do not accept any liability for any loss or damage (whether direct, indirect, consequential or otherwise) arising from the use of this presentation.

The information contained in this publication may include financial and business projections that are based on a large number of assumptions, any of which could prove to be significantly incorrect. New Forests notes that all projections, valuations, and statistical analyses are subjective illustrations based on one or more among many alternative methodologies that may produce different results. Projections, valuations, and statistical analyses included herein should not be viewed as facts, predictions or the only possible outcome. Before considering any investment, potential investors should conduct such enquiries and investigations as the investor deems necessary and consult with its own legal, accounting and tax advisors in order to make an independent determination of the suitability, risk and merits of any investment.

New Forests Advisory Pty Limited (ACN 114 545 274) is the holder of AFSL No 301556. New Forests Asset Management Pty Limited (ACN 114 545 283) is registered with the Australian Securities and Investments Commission and is an Authorised Representative of New Forests Advisory Pty Limited (ACN 114 545 274, AFSL 301556). New Forests Inc. has filed as an exempt reporting adviser with the Securities and Exchange Commission.

Information current as of 30 March 2016.



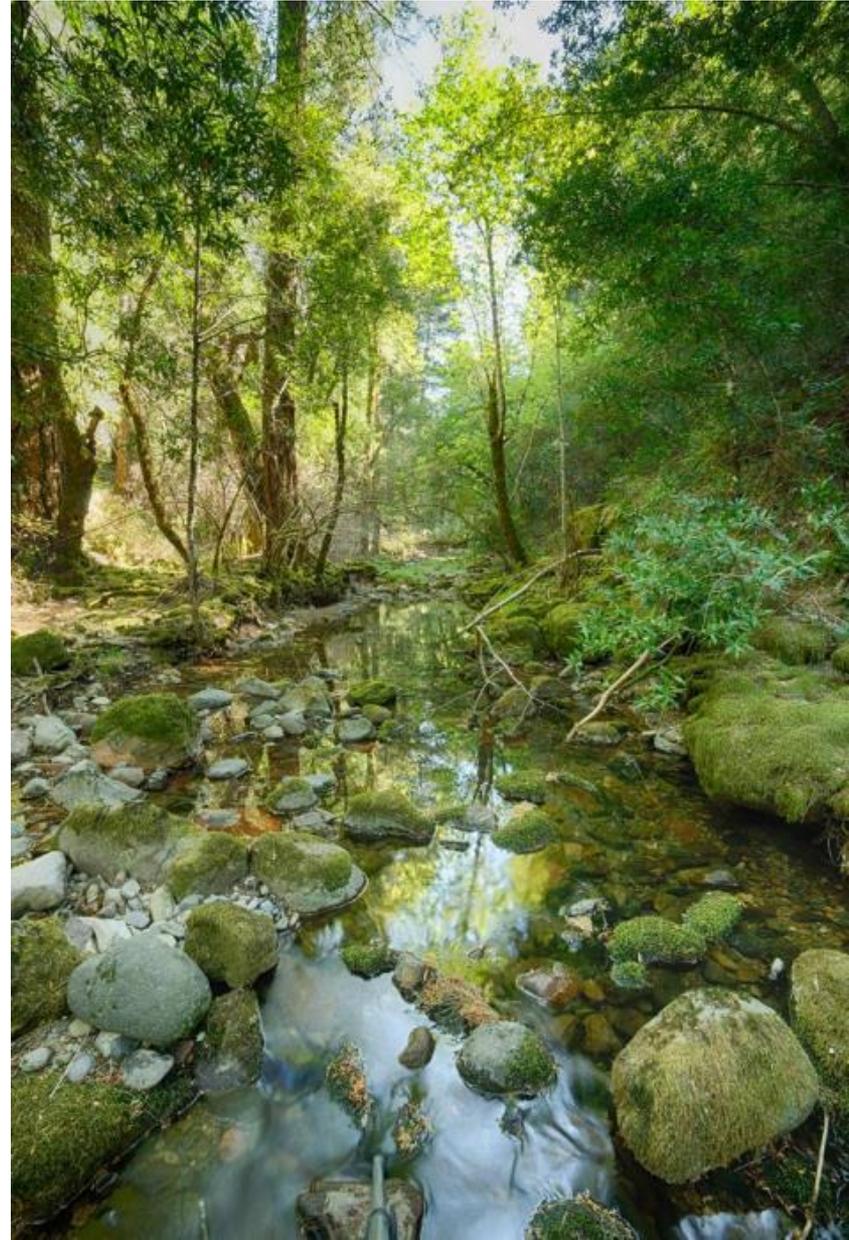
The Drive to Price Ecosystem Services

- Ecosystems (e.g. forests, marine habitats) provide services necessary to sustain human populations including climate regulation, food security, and provision of water.
- These “ecosystem services” are extremely valuable to human society, but for most of history, have lacked any commercial pricing
- The result has been an over-use of ecosystem services, resulting in climate change, biodiversity loss, pollution, and myriad environmental problems that threaten human communities.
- Conservation finance instruments are being developed to price ecosystem services and may support better management of landscapes where production and conservation are sustainably incorporated.
- Conservation investment management strategies can support a shift to landscape-level management, which can support maintenance of ecosystem services, make efficient use of land and natural resources, provide sustainable livelihoods, and also meet the food, fibre, and fuel needs of a growing population.



What is Conservation Finance?

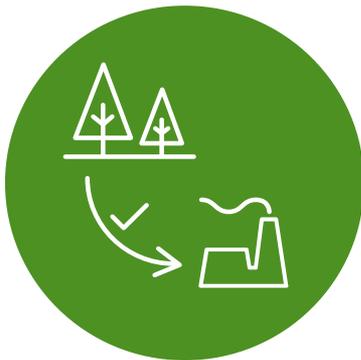
- Conservation finance is a mechanism through which a financial investment into the conservation of an ecosystem is made with the expectation of a commercial return.
- Conservation finance seeks to generate profit while also driving a positive impact on natural resources and ecosystems: these mechanisms generate cash flows through the sustainable management of an ecosystem, part of which is reinvested into the land, other projects, or distributed; with a portion returned to investors.



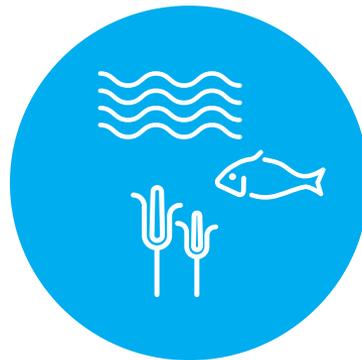
Conservation Finance Instruments

Rapid growth in agribusiness commodities has been a major cause of deforestation

- Production of beef, soybean, cocoa, palm oil, and other commodities is increasing rapidly in response to growing global demand.
- Much of this increase comes at the expense of forests, as commodity prices are closely linked to deforestation.*
- By placing a commercial value on ecosystem services, we can both conserve ecosystems and meet growing demand for resources.



**FOREST
CARBON MARKETS**



**WATER QUALITY
AND WATER RIGHTS**



**BIODIVERSITY
COMPENSATION**



Conservation Forestry in the US

- Forestry investment in the United States, the largest institutional investment market for timberland, has now evolved beyond traditional management for timber production to also encompass returns driven by conservation management and the valuation of ecosystem services.
- Transactions can integrate timber investment with conservation finance instruments, such as conservation easements, water rights, carbon markets, and government funding for conservation.
- Forestry investment managers are among the major players in a growing conservation finance industry due to experience with sustainable land management and the opportunity to incorporate revenue from conservation-related sources into their investments to enhance returns.



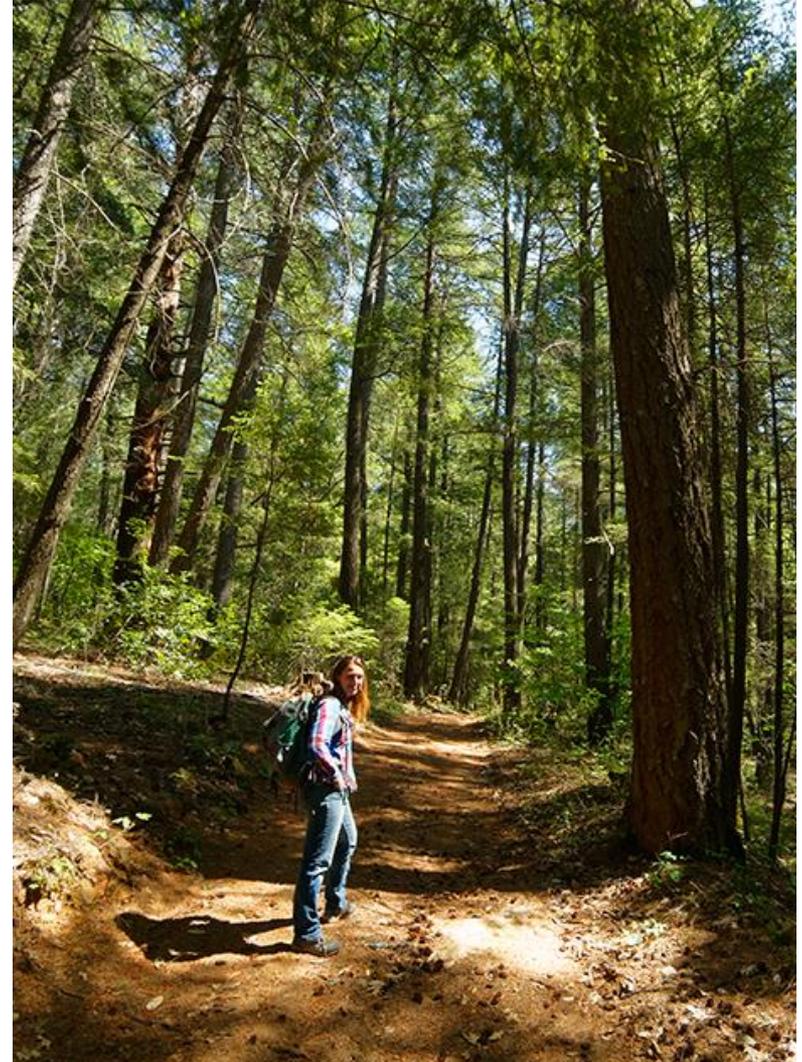
PAYMENT FOR CONSERVATION

A **conservation easement** is a voluntary legal agreement between a landowner and a land trust, placing restrictions on the use of a property to protect the natural values of the land. The landowner continues to own and manage the land and may receive a payment or state and federal tax advantages for avoided development to offset the forgone gains associated with future use. The easement holder has a responsibility to monitor future uses of the land to prevent future development on the easement.



New Forests' Investment Program in Conservation Finance

- Institutional investors are increasingly concerned about the integration of sustainability into their portfolios, and some investors are proactively seeking investments with highly positive social and environmental outcomes.
- A growing number of institutional investors is seeking to divest from fossil fuels and reduce the greenhouse gas emissions associated with their investment portfolios amid rising concerns about climate change and ESG factors.
- New Forests' US business offers institutional investors focused strategies related to carbon forestry and mitigation banking, which are opportunities to invest at scale in conservation finance.
- New Forests established the first institutional fund investing in both forest carbon and mitigation banking and has developed additional investment products that build on our track record.



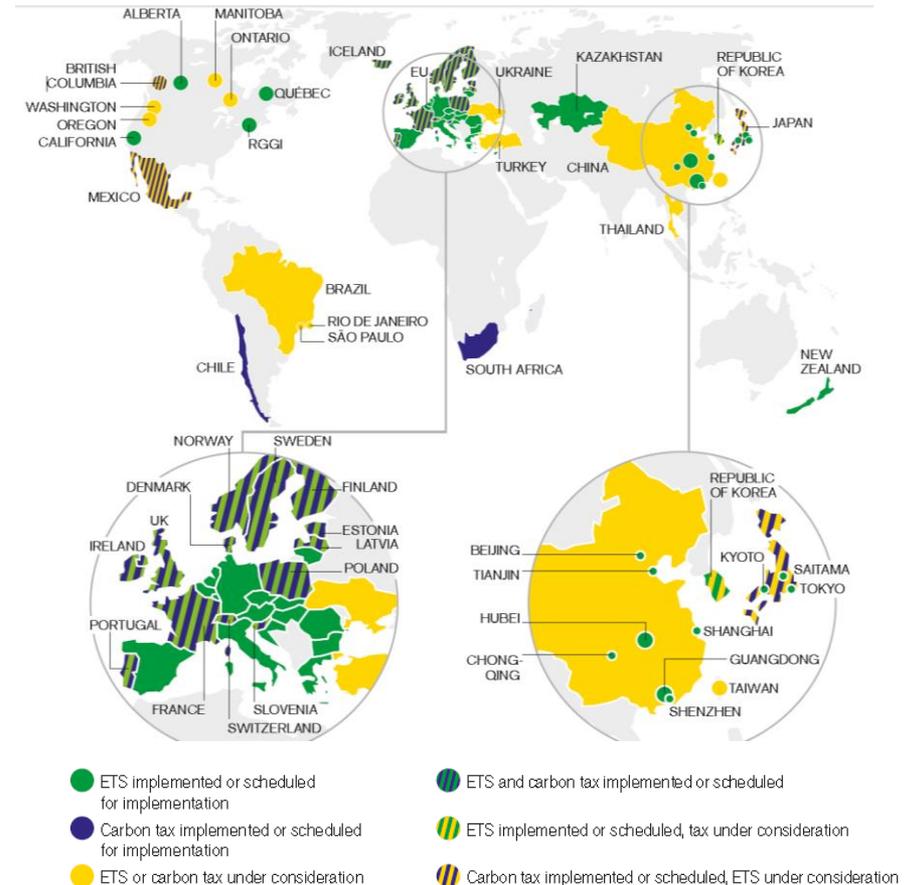


Forest Carbon

Overview of Carbon Markets

The world's emissions trading schemes are now valued at about USD 34 billion. Globally, there are now approximately 40 countries and 20 states, regions, or cities that have implemented or are scheduled to implement carbon pricing mechanisms.

- Both mandatory (regulated) and voluntary carbon markets exist.
 - Regulated: e.g. European Union, California, New Zealand, US Northeast, Quebec, Ontario
 - Unregulated: Organisations choose to voluntarily to offset their carbon emissions
- Regulated cap-and-trade systems place a limit on total greenhouse gas pollution by issuing or auctioning a limited number of tradable permits to pollute. Some cap-and-trade systems allow emission reduction projects from unregulated sectors of the economy to sell offsets to companies in regulated sectors.



New Forests focuses on the California carbon market due to the market's scale and sophistication.



California Carbon Market

California is the world's first regulated carbon market to include offsets from carbon storage in forests.



- Forests play a significant role in global climate and the carbon cycle. A carbon price signal can add commercial value to certain standing and growing forests.
- The California cap-and-trade market allows emitters to use offsets to cover up to 8% of their compliance obligation for carbon pollution.
- Analysts expect offset demand of 150-200 million tonnes in aggregate by 2020, with an expected market value of over USD 2 billion.
- Forest offsets are one of a few types of allowed offsets. At present the market is supply constrained.
- 3% of privately held US forests are now registered with in the California Carbon market.



California Forest Project Types

California allows forestry activities that reduce or avoid greenhouse gas emissions to generate offsets for use in the carbon market.

- **Improved Forest Management (IFM)** – where more carbon is stored through management strategies that sequester additional carbon over time compared to business as usual management
- **Avoided Conversion** – where a conservation easement avoids the conversion of a forest to non-forest use
- **Reforestation** – where new planting projects store carbon in growing forests



Integrity of Offset Supply and the System

Forest carbon offset projects must meet strict environmental, social, and technical criteria to comply with state regulations.



The state's regulator, the Air Resources Board, can issue Offset Credits (ARBOCs) to projects that have received a positive verification from qualified third-party verifiers.

New Forests successfully registered the first forest carbon project under the state's Compliance Offset Protocol - US Forest Projects in 2014 for the Yurok Tribe, demonstrating that the rigorous California compliance offset protocol can deliver real financial and environmental benefits to forest landowners in the United States. As of December 2015, New Forests' funds are developing over 350,000 acres of forest carbon offset projects for the California cap-and-trade system and have sold 3.5 million offsets into the California carbon market.

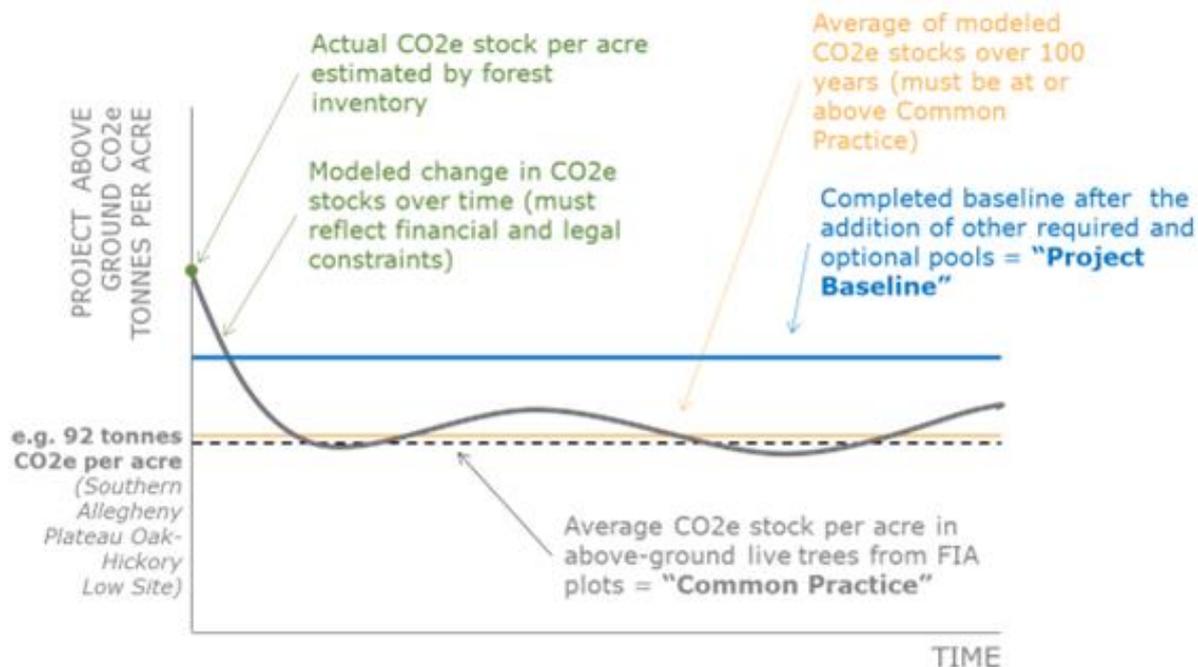
[Click the image above to learn about forest carbon verification and The Yurok Tribe/Forest Carbon Partners CKGG Improved Forest Management Project. Video will launch on YouTube.](#)



How IFM Projects Quantify Carbon

- Forests store carbon in several reserves – known as carbon pools – such their above-ground biomass, below-ground biomass, fallen trees and branches, and the soil.
- Carbon projects quantify the difference in total carbon stored in some pools in a “project scenario” as compared with business as usual, which must reflect the financial and legal constraints of a managed forest.

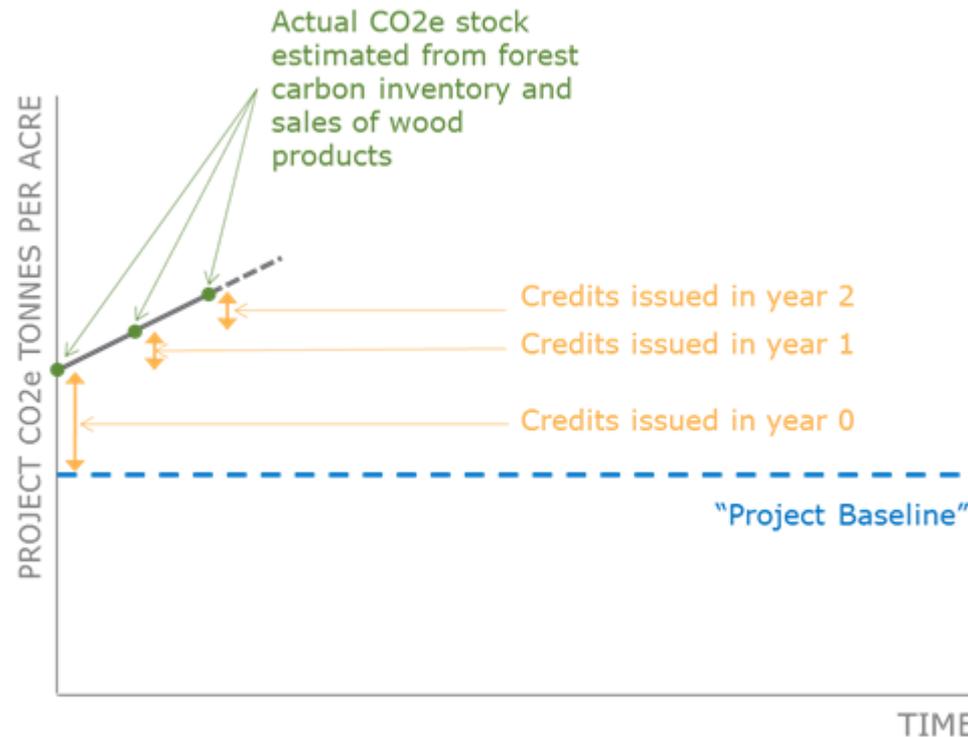
Quantifying the Project Baseline



Example IFM Carbon Crediting

- Carbon offset credits may be issued for additional carbon stored by the project as compared to the baseline, after deductions for an insurance pool and other factors.
- Credits can be issued on an annual basis as more carbon is sequestered and stored in the growing forest and its carbon pools.
- The California system requires third-party verification and regular monitoring to ensure credits have integrity and the emissions reductions are permanent.

Quantifying the Project Carbon Credits



Landowner and Investor Considerations

Carbon projects provide additional revenue streams that can increase the value of certain forests, but projects must adhere to strict guidelines to ensure the integrity of the cap-and-trade scheme.

Landowner Obligations

- A commitment to maintain any carbon stocks sold for 100 years from the date of sale on the project area.
- Landowners can exit project at any time but must purchase and retire carbon offsets to replace credits issued to the project (plus some additional credits if exiting the project in years 1-50).
- Conservation easements are not required (except for avoided conversion projects).

Forest Management

- Harvesting is allowed, but carbon sold must be maintained on property. If carbon stocks fall below the level to which credits have been issued, credits must be retired to cover the harvest.
- Natural forest management and sustainable harvesting of native species must be employed.
- There is no penalty for unintentional destruction of carbon stocks (e.g. fire) - covered by buffer insurance mechanism.

Monitoring and Reporting

- Annual carbon accounting reports (desk report).
- On-site verification must occur at least every 6 years.
- Full re-inventory must be carried out every 12 years.



New Forests' Forest Carbon Partners



- Forest Carbon Partners (FCP) is an investment fund managed by New Forests.
- FCP provides project finance, development, and credit sales services for forest owners who wish to participate in the California carbon market.
- FCP primarily works with family, industrial, and tribal landowners to create carbon offset projects that deliver real financial value – increasing and diversifying revenue for timberland owners.
- Timberland owners can manage forests for both log sales and carbon offset sales, providing meaningful additional current income while helping transition a forest towards older stands and higher-value wood products.



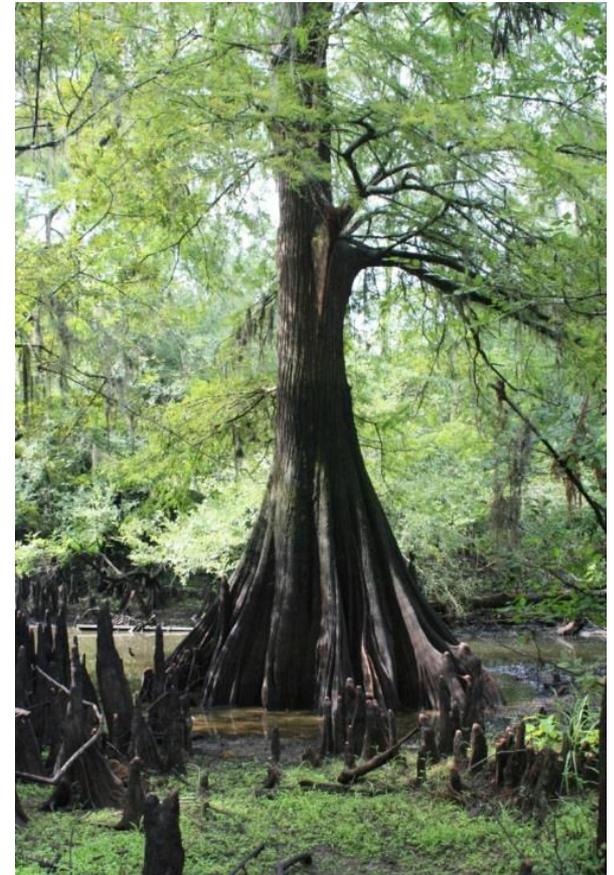


Mitigation Banking

What Is Mitigation Banking?

Mitigation banking involves the creation and sale of credits for wetland, stream, or endangered species habitat conservation, restoration, or protection.

- The purpose of mitigation banking is to provide compensation for unavoidable impacts to aquatic resources permitted under Section 404 of the Clean Water Act (CWA) or a similar state or local wetland regulation. Conservation banks or species banks operate in a similar manner but focus on rare and endangered species habitat.
- Mitigation banks are a type of real asset as the value is being derived from the land and is linked to activities in other real asset sectors, such as:
 - **Real estate** - mitigation banking credits are sold to developers of residential and commercial real estate
 - **Infrastructure** - mitigation banking credits are sold to large infrastructure projects, particularly transportation, reservoirs, flood control projects, etc.
 - **Energy** - mitigation banking credits are sold to oil wells, pipeline developers, solar projects, etc.



Mitigation Banking in Practice

Development impacts (e.g. construction of gas pipelines; reservoir construction and expansion; highway construction; solar and wind farm developments and their transmission corridors; commercial real estate) drive demand for mitigation. Mitigation banks undertake environmental restoration work and sell credits within a determined service area to compensate for impacts in accordance with permitting requirements.



Development
Impact



Service Area



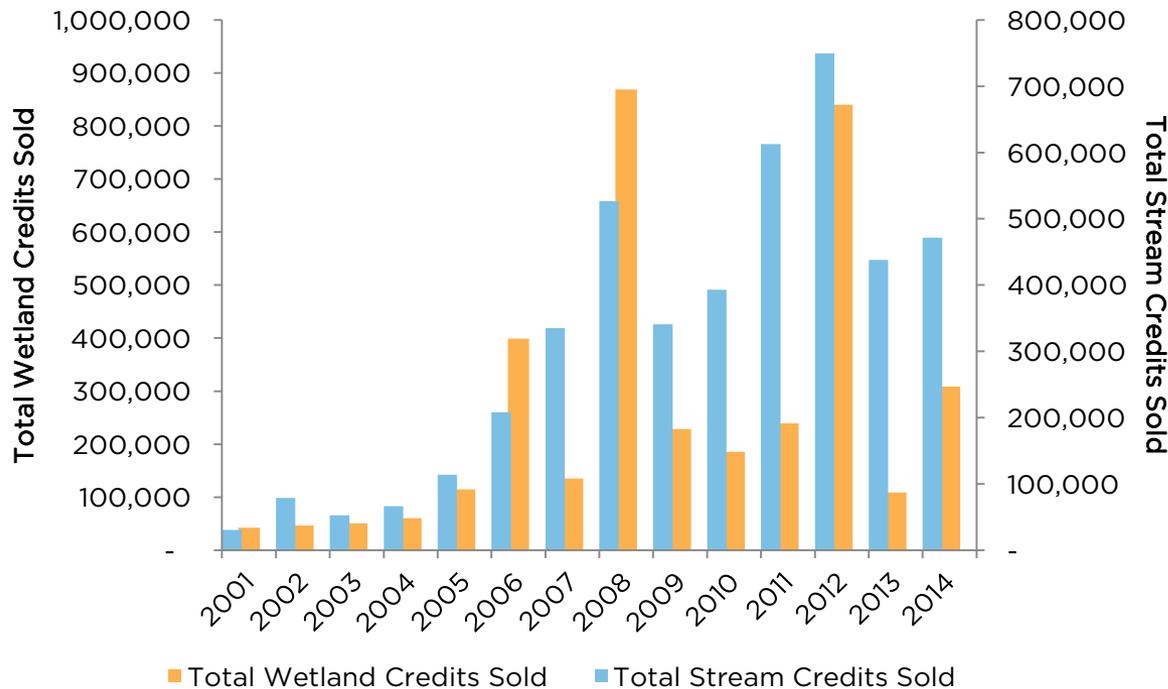
Mitigation Bank



US Mitigation Banking

Annual turnover (wetland and stream credit sales) is estimated to be in the order of USD 60-80 million.

US Wetland and Stream Credit Sales



Before: Low average crop production and low economic value as farmland



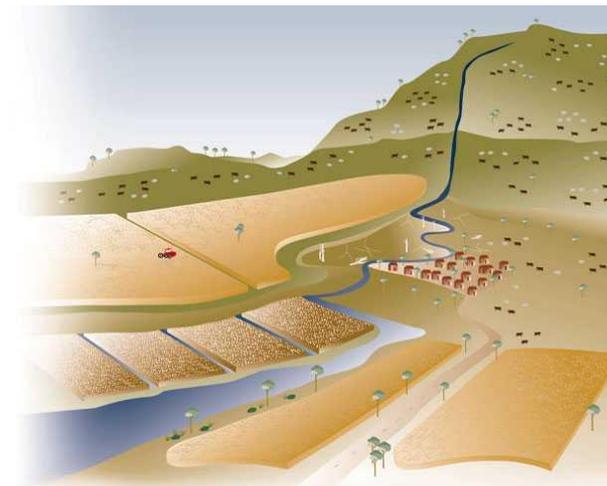
After: Fully restored wetland; high environmental value and downstream flood protection; high economic value as mitigation bank



Towards the Future

Mechanisms to price ecosystems via carbon markets or mitigation banking markets could produce the basis for the stabilisation of conservation and production functions into sustainable landscapes.

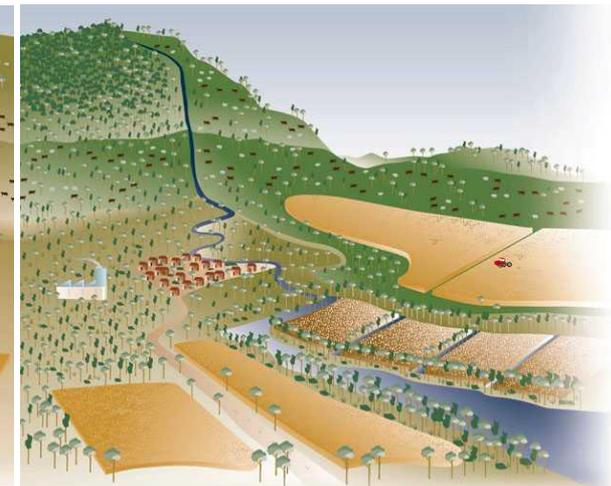
Environmental markets investments can be direct, standalone investments or take place alongside commercial timber investment.



P R E S E N T

The existing rural landscape.

LAND USE			ENVIRONMENTAL PROBLEMS
OUTPUT	AREA (ha)	REVENUE (000\$)	
Sheep	250,000	25,000	<ul style="list-style-type: none"> ◆ Dryland salinity increasing ◆ Rising water tables and saline discharge ◆ Nutrients leaching into waterways ◆ Low biodiversity ◆ Soil erosion and turbid waterways
Cattle	200,000	40,000	
Wheat	250,000	118,000	
Canola	150,000	112,000	
Cotton	150,000	490,000	
TOTAL	1,000,000	785,000	



F U T U R E

Planted forests in the landscape create a more diverse economy and a healthier environment.

LAND USE			ENVIRONMENTAL BENEFITS
OUTPUT	AREA (ha)	REVENUE (000\$)	
Sheep	150,000	18,000	<ul style="list-style-type: none"> ◆ Dryland salinity reduced ◆ Lower water tables and clean discharge ◆ Nutrients retained on farm ◆ Biodiversity increased ◆ Soil erosion reduced
Cattle	120,000	28,000	
Wheat	200,000	94,000	
Canola	120,000	90,000	
Cotton	150,000	490,000	
Timber	26,000	12,000	
Bioenergy	117,000	9,000	
Charcoal	117,000	14,000	
Carbon credits		41,000	
Salinity credits		26,000	
TOTAL	1,000,000	822,000	

Revenue streams from pricing ecosystem services provide option value and new opportunities in forestry and land management for institutional capital.



Want to Learn More?

To learn more about New Forests' investment programs in carbon forestry in the United States contact Radha Kuppalli at rkuppalli@newforests.com.au.

