

**KENAI PENINSULA'S "TURQUOISE" CARBON:
PROSPECTS FOR FINANCE AND CONSERVATION**

Emory Wellman, KBNERR

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PEAT AND PEATLANDS

What is peat?

- Partially-decomposed plant material
- Oxygen-poor, waterlogged environments
- “Sponge-like”



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- Oxygen-poor, waterlogged environments
- “Sponge-like” capacity

What is a peatland?

- An area covered with accumulated peat, with or without other vegetation



PEATLAND FUNCTIONS AND VALUES

PRODUCTION

- Extraction
- Provision of plants and animals (subsistence)

REGULATION

- Water storage and transmission (inc. floodwater)
- Groundwater recharge
 - Water quality
- Carbon storage and sequestration

COMMUNITY/CULTURE

- Recreation
- Education
- Culture/heritage (subsistence)

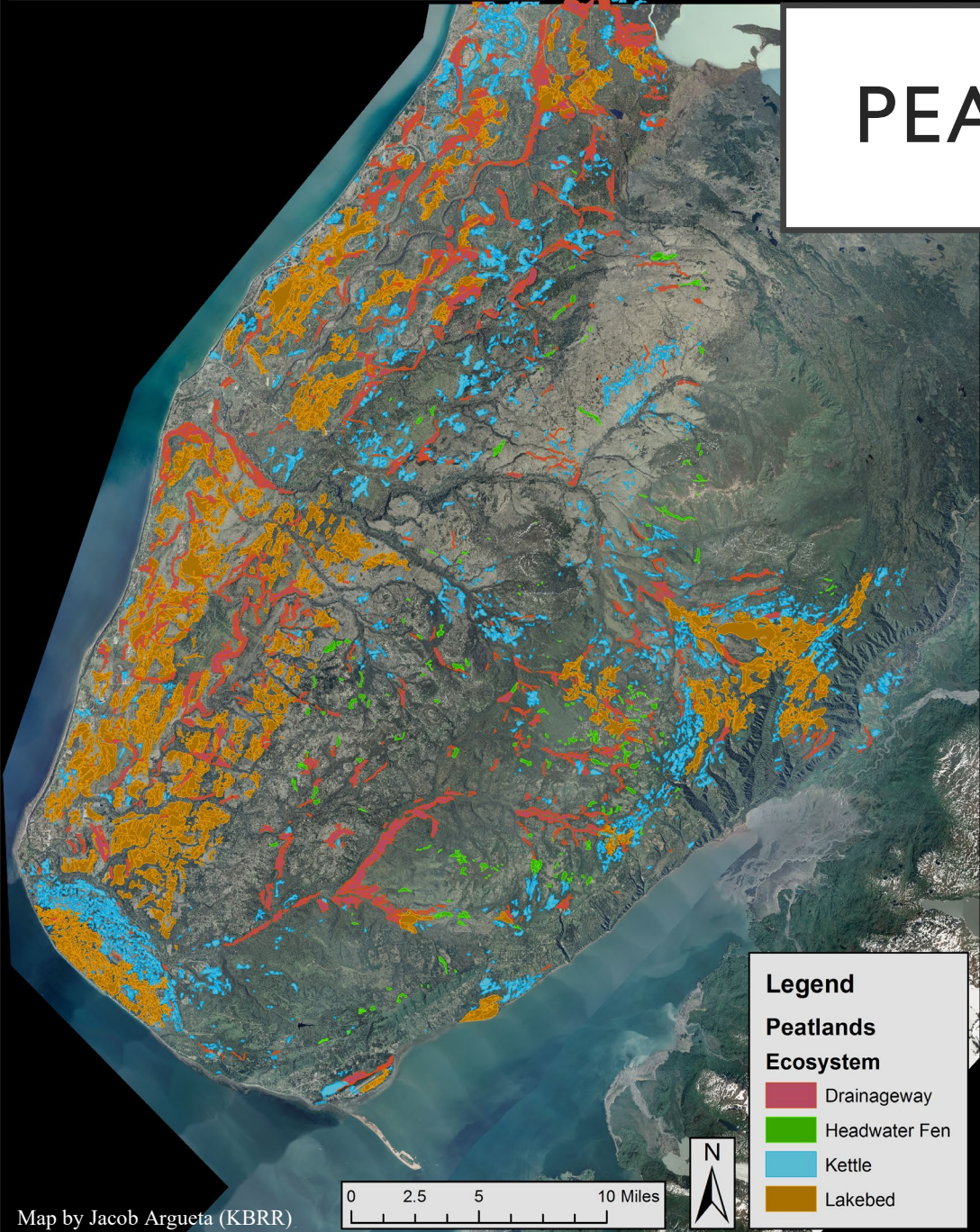
CARBON STORAGE & SEQUESTRATION



- Rapid vegetation growth
- Reduced decomposition:
 - Holds water (15 – 20 times dry weight)
 - Acidifies surroundings
 - Lignin-like compounds
- Boreal/subarctic peatlands: 455 Pg C
 - About $\frac{1}{3}$ of total world soil carbon
- Alaskan peatlands: 71.5 Pg C

PEATLANDS ON THE PENINSULA

- Most common wetland type on the lower Peninsula
- Most peatlands are fens
 - Bogs are rare



SITUATION REPORT

- Majority of Peninsula wetlands are in “reference” condition
 - *Relatively undisturbed by human activity, natural, self-sustaining functions more or less unimpaired*
- Management Implications
- Stressors
 - Extraction
 - Development
 - Housing, roads, agriculture
 - Climate impacts?





“Czech investments for expanding peat extraction in Brest Oblast”, <http://investinbelarus.by>

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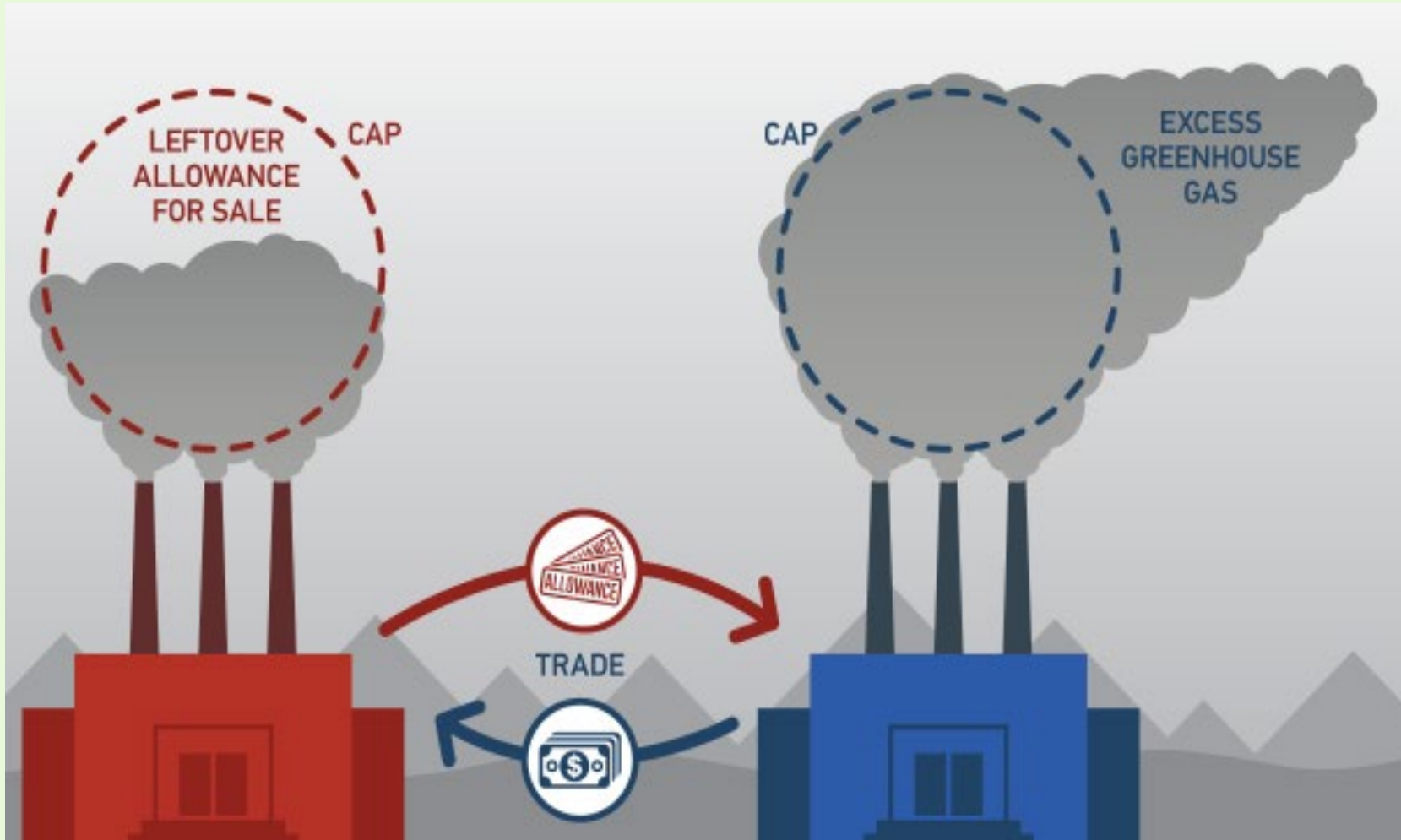
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“New Research Outlines Global Threat of Smoldering Peat Fires”, <http://wildfiretoday.com/tag/peat/>

CARBON FINANCE AND CONSERVATION



Cap and Trade

- **Cap:** A limit on greenhouse gas emissions, which is split into “allowances”, giving companies the right to emit that amount
- **Trade:** Market where companies can buy and sell allowances if they over- or under-emit

Offset: An emissions reduction made to compensate for – to offset – emissions made elsewhere.

THE VOLUNTARY CARBON MARKET

- Standards created by the industry
- Use: Corporate responsibility, imaging, and speculation
- Smaller market, cheaper credits
- Lower development and transaction costs
- More flexible, less onerous



Kachemak Bay wetlands could be profitable for landowners

By JESSE RABINOWITZ • OCT 3, 2017

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Beluga Slough.

CREDIT COURTESY OF GINGER FRIZZELL

What if you could get paid for simply agreeing to not develop any wetlands on your property? The idea is to store carbon in marshes and bogs, preventing the greenhouse gas from entering the atmosphere, and the Kachemak Bay National Estuarine Research Reserve wants to know if enough carbon is

stored around Kachemak Bay to turn a profit.

The idea of landowners getting paid to preserve carbon-storing property has been done elsewhere, but Alaska could be the mother lode of carbon storage. The Homer-based National Estuarine Research Reserve kicked off a new study this week aimed at learning more about storing carbon in wetlands.

There are several kinds of marshes, bogs and muskegs in Alaska, but the reserve is interested in peatlands, a common wetland found around the Southern Kenai Peninsula.

Wetlands naturally store carbon by keeping plant matter wet and alive. This prevents organic matter from decaying, limiting the carbon it would otherwise release, and companies may be interested in paying landowners to offset their emissions if they have enough carbon-reducing wetlands on their property.

But, land needs to be verified before a price tag can be put on its carbon-storing potential. Depending on how much carbon a property holds, landowners are awarded carbon credits they can then sell to companies and individuals looking to offset their emissions.

HOW IS THIS
RELEVANT TO THE
KENAI PENINSULA?

This work has been funded through the National Estuarine Research Reserve Science Collaborative, administered by the University of Michigan.

VCS VM0007: REDD+MF



VCS Methodology

VM0007

REDD+ Methodology Framework (REDD+MF)

Version 1.56

9 March 2015 14 February 2017

Sectoral Scope 14

- “Project activities that reduce emissions from planned (APWD) and unplanned (AUWD) wetland degradation”
 - APWD: “conversion of wetlands to a degraded condition must be legally permitted”
- Allows for restoration or **“conservation of intact wetlands” (CIW)**
- Sets out requirements for designing, completing, and monitoring a project

WHERE DO WE GO FROM HERE?

Summer field trips with KBNERR

- Join experts from the Smithsonian and WBNERR in studying carbon storage and marketing
- Stay tuned!



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Modeling

- Estimate carbon storage
- Potential model inputs

InVEST

integrated valuation of
ecosystem services
and tradeoffs

FOREST CARBON WORKS

The screenshot shows the 'About Us' page of the Forest Carbon Works website. The browser address bar displays 'Secure | https://www.forestcarbonworks.org/about-us/'. The page features a navigation menu with links for HOME, ABOUT US, HOW IT WORKS, RESOURCES & SUPPORT, and CONTACT. A 'GET STARTED' button is prominently displayed. The main content area includes a 'Questions?' section with an 'ASK US ANYTHING' button, a 'PARTNER WITH US' section with a search bar and 'SEARCH' button, and a 'Resources & Support' section listing various documents and guides. A 'Store more carbon.' section highlights that forestry methods can sequester carbon, and a 'GET STARTED - IT'S FREE!' button is present. The page also includes a 'Forests sequester carbon' section and a 'A comprehensive overview of carbon markets' section with a link to an introduction to forest carbon management.

Secure | <https://www.forestcarbonworks.org/about-us/>

Forest Carbon WORKS

GET STARTED

HOME ABOUT US HOW IT WORKS RESOURCES & SUPPORT CONTACT

About Us

We seek to remove obstacles to forest carbon projects, allow smaller landowners to access the market, and enable ventures that would otherwise not be possible. More carbon capture means more long-term forest conservation!

Forests sequester carbon

Forest owners know the ecological value of their forests. And now, some of them are getting paid for it.

California has the country's first enforced cap-and-trade program, requiring companies that emit carbon to cut their emissions. To meet a part of this requirement, firms can buy offsets from forest owners who have committed to enrich their forests' biomass.

Store more carbon.

Certain forestry methods risk releasing carbon into the atmosphere. Our members learn to avoid the release of carbon and to instead sequester carbon in their forests.

GET STARTED - IT'S FREE!

We offer small landowners a fast track to the carbon market. With our guidance, forest owners can start offset projects and monetize the carbon stored by their forests. We provide members a chance to broaden their revenues beyond timber and cultivate their forests' ecological value.

While many members are forest owners, our tools and know-how can help others, too! Those who share the goal of forest conservation, such as foresters and land trusts, can also benefit from partnering with us.

A comprehensive overview of carbon markets

Want to learn even more about the carbon market and the role of forests? The [United States Department of Agriculture \(USDA\)](#) has prepared several thorough video and slide presentations that are available online.

[An introduction to Forest Carbon Management](#)

Questions?

ASK US ANYTHING

FORESTERS

PARTNER WITH US

Search... **SEARCH**

Resources & Support

- Understanding the Application Process
- Legal Contracts
- Payment Calculator
- Glossary
- Tree Measurement
- Frequently Asked Questions
- Payment Breakdown
- Forestry Services Directory
- Directory of Land Trusts

Like Be the first of your friends to like this

STEPS

1. Create account, apply, determine eligibility
2. Use provided smart phone and app to photograph trees, measuring forest carbon
3. Submit collected information and receive membership offer, outlining expected payments
4. If membership offer is accepted, receive annual payments

LEARN MORE!

- Cook Inlet Wetlands
 - www.cookinletwetlands.info
- Homer Soil and Water Conservation District
 - *Kenai Peninsula Wetlands: A Guide for Everyone*
 - *Managing Kenai Peninsula Wetlands*
- Peninsula Flex and Parcel Viewers
 - <http://mapserver.borough.kenai.ak.us/flexviewer/>
 - <http://maps.kpb.us/kpbmapviewer/>
- Web Soil Survey (Natural Resources Conservation Service)



QUESTIONS?

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- “About Us”, <https://www.forestcarbonworks.org/about-us/>