

The fine print – The views presented here do not reflect the official position of any organization I am professionally associated with or employed by.

Brief Methodology

- Where feasible, this analysis incorporated site level information (social and biophysical) into the estimates of economic values
- The aim is to provide complimentary social and economic information on the additional co- benefits of ecosystem services beyond coastal protection.
- The analyses for each of the key ecosystems relied heavily on literature and benefit transfer approaches.





The basic calculations are as follows:

Mean Carbon (MgC Ha⁻¹) * Area (Ha) = Mg (or T) of Blue Carbon in Study Site

Total Potential CO, emissions per hectare (MgCO, Ha⁻ ¹) = Mg C * 3.67

Carbon sequestration value = MgC * X\$/ MgC = X\$





- "Realistic" discount rates Range from 3% to 10%
- The Diagram just illustrates differences in value depending on short or long term intergenerational considerations

	Discount Rates				
	0.0%	1.4%	3%	5%	10%
SCC= US\$48 T ⁻¹ C	NET PRESENT VALUES (100 YEARS)				
PORTLAND COTTAGE	\$466.3 m	\$248.0 m	\$144.2 m	\$89.0 m	\$42.8 m
BOGUE LAGOON	\$121.4 m	\$64.6 m	\$37.6 m	\$23.2 m	\$11.1 m
SALT MARSH	\$44.9 m	\$23.9 m	\$13.9 m	\$8.6 m	\$4.1 m
COMBINED SITES	\$632.6 m	\$336.5 m	\$195.7 m	\$120.7 m	\$58.1 m
JAMAICA TOTAL	\$17.8 b	\$9.5 b	\$5.5 b	\$3.4 b	\$1.6 b

The discount rate determines the weight placed on impacts occurring at different times The higher the discount rate, the lower the concern for the future and the lower the social cost of carbon

Economic Contribution: Mangrove Fisheries



- High primary producers support other species
- Mangroves provide habitat to juveniles and adults
- Estimating the economic value of mangrove-associated fisheries is challenging
- Value Transfer based on global studies
- Global median value of US \$77/ha/yr for (fin) fish, and US \$213/ha/yr for mixed species fisheries



Estimated annual economic contribution of mangrove to small-scale mixed fisheries.

* Global median value per hectare per year



US\$54,145

Fish Sanctuaries (SFCAs)



Other Market Benefits



- Potential High End Recreational Fisheries
 - catch-and-release fishing for bonefish contributes around US\$1 billion per year to Florida's economy (Ault et al. 2010).
- Low impact aquaculture vulnerable communities
 - mariculture (oysters, gracilaria/Irish moss)
- Mangrove honey bees
- Canoeing, Bird watching, Nature walks (boardwalks)



Recommendations



- Improve data sharing between government agencies
- Targeted (research) data collection exercise possibly
- Abundance, catch and effort for commercially important fin and shellfish mangrove species
 - Can be used in bioeconomic modeling, nursery impact, SFCAs etc.
- Role that mangroves play in protecting aquifers from saline intrusion (fresh water)



Conclusions

- For most persons benefits easiest to identify are provisioning services (fisheries, timber, honey and fuel wood), cultural services (tourism)
- However regulation of carbon via sequestration is a major additional benefit
 - Along with coastal protection
 - Although no Carbon Market exists, value still noteworthy
- Other estimates were difficult due to lack of site specific data regarding the market values attached to those services (erosion, water quality)
- Protecting and restoring mangroves can bring ecological as well as economic benefits.

