Living shoreline and Net-zero 2050 rising in South Korea

BENTHOS Laboratory of Marine Benthic Ecology

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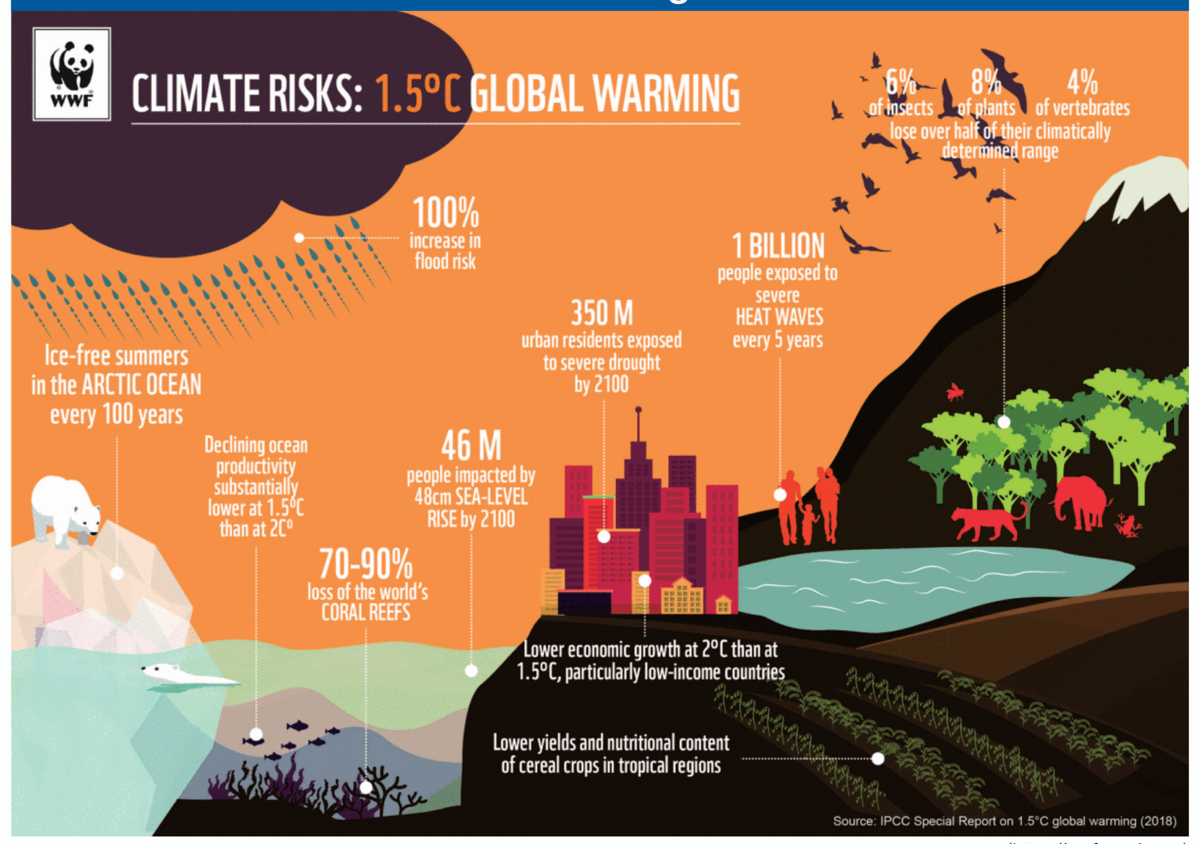
Global Warming Issue



(https://wwf.panda.org)

Global Climate Risks

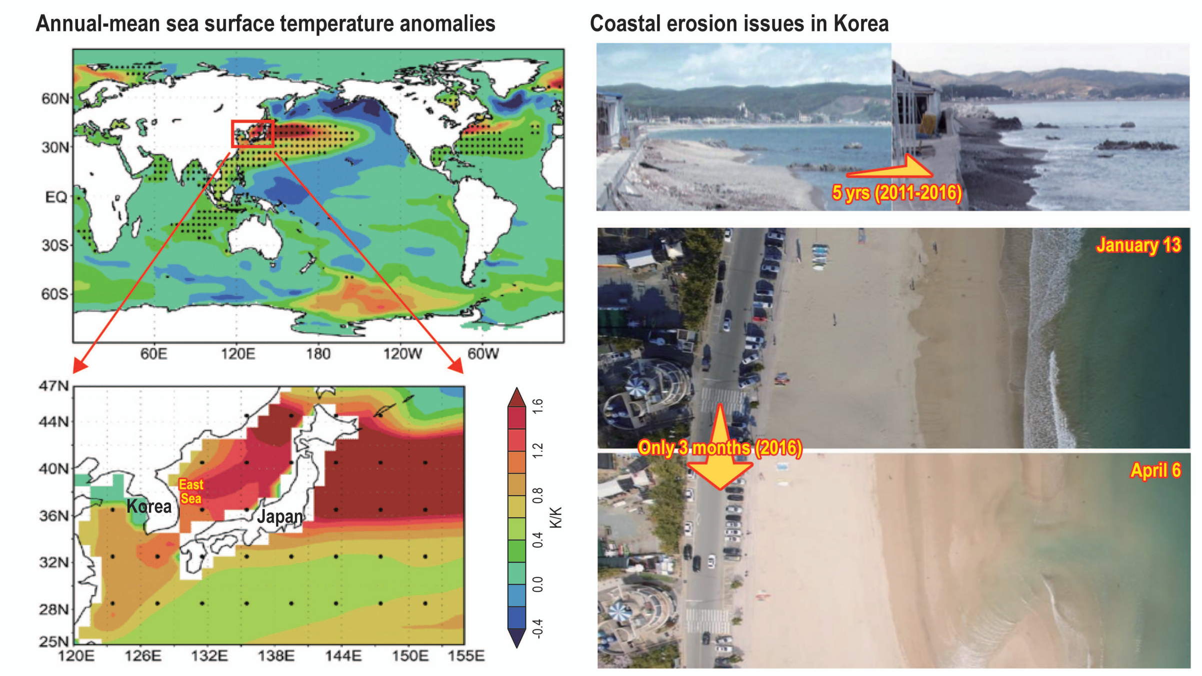
The Climate risks become a reality

Extreme heat-wave and wildfire, "Great Flood Era", Soaring death tolls

Cimate change impacts to Korean coasts

The Climate risks become a reality in South Korea

Increase of SST, Sea-level rise, Ocean acidification, Coastal erosion



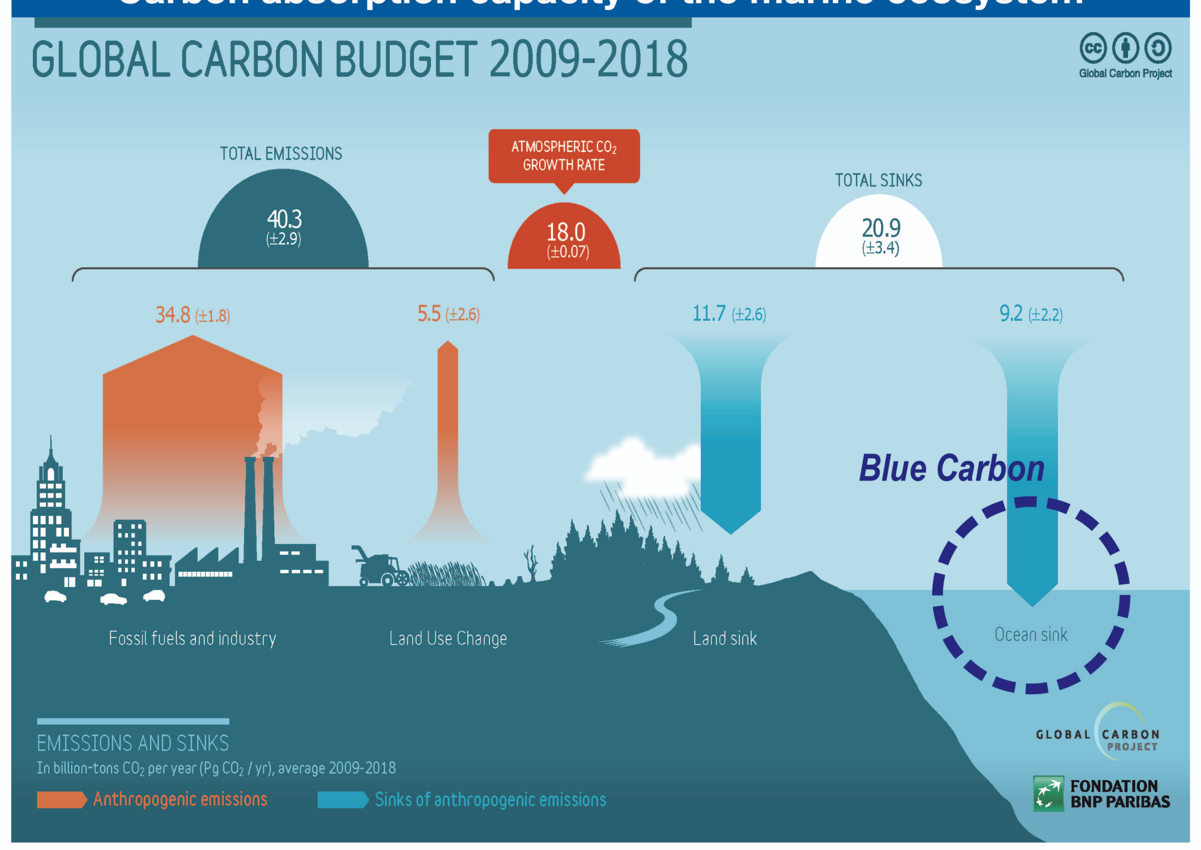
(modified from Toda & Watanabe et al., 2020) (modified from Yoo & Oh et al., 2016)

Declaration of Net-zero 2050 by the KOR government

Net-zero 2020 of Korea

KOR-US Joint statement, needs for adjusted NDC (Nationally Determined Contributions)

Carbon absorption capacity of the marine ecosystem

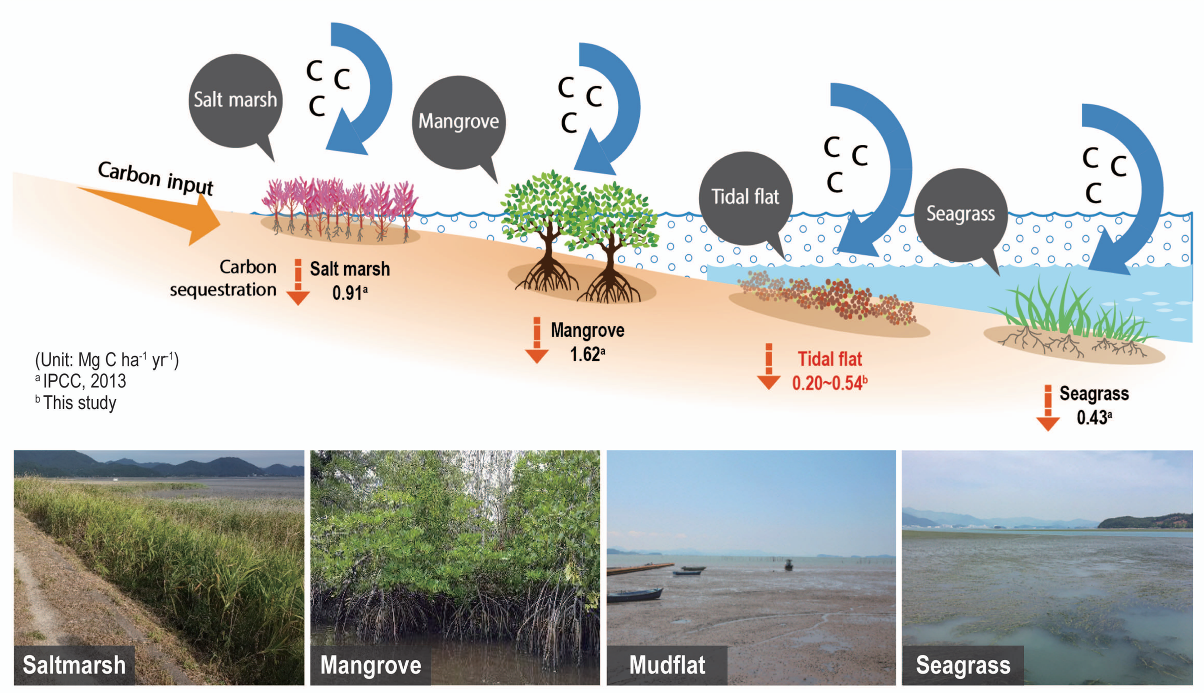


(Friedlingstein et al. 2020)

Current status of blue carbon in the world

Blue Carbon, carbon absorption into marine ecosystem

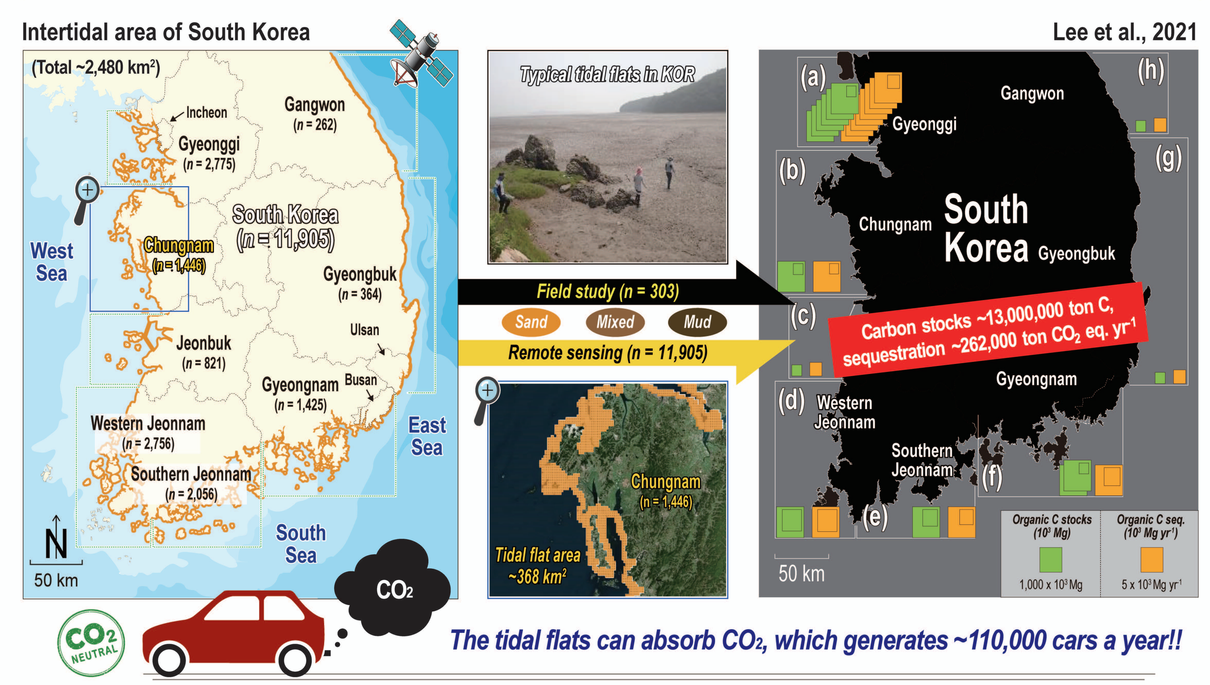
Massive amounts of carbon are captured and storaged by marine plants



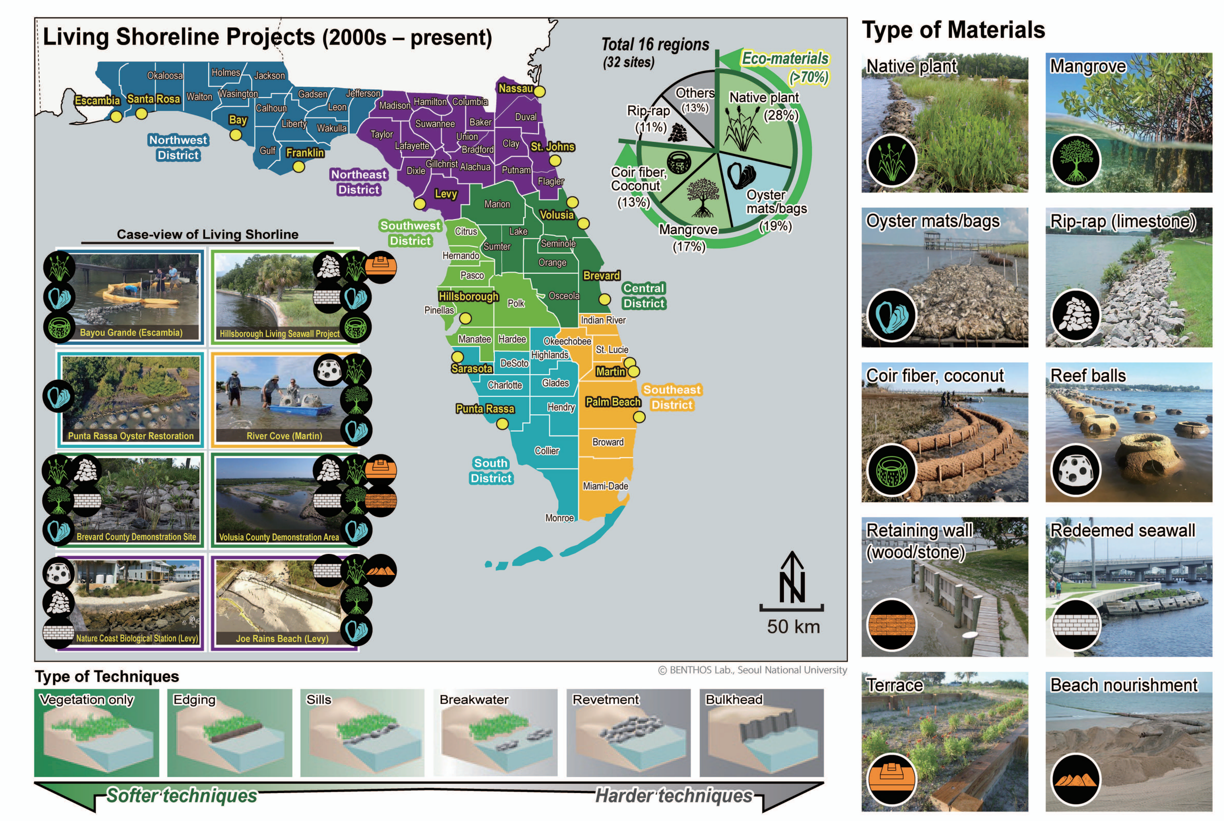
Blue Carbon research in South Korea

Carbon sequestration/emission by intertidal flats of South Korea

The first national scale evaluation of organic carbon stock & seq. rates in KOR



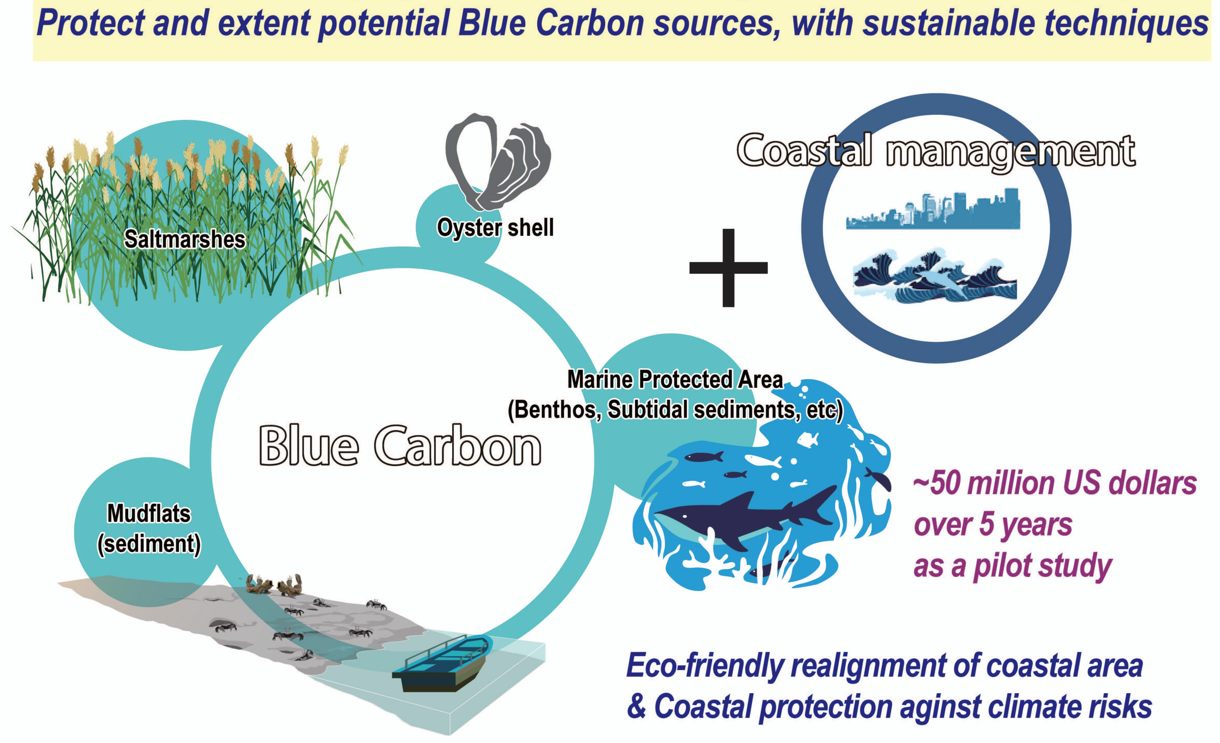
Insight from Florida living shoreline in the US



Korean Coastal New Deal (CND) project

Living shoreline is proposed in Korea, namely, "Coastal New Deal" project

Protect and extent potential Blue Carbon sources, with sustainable techniques



Three key techniques in the CND project

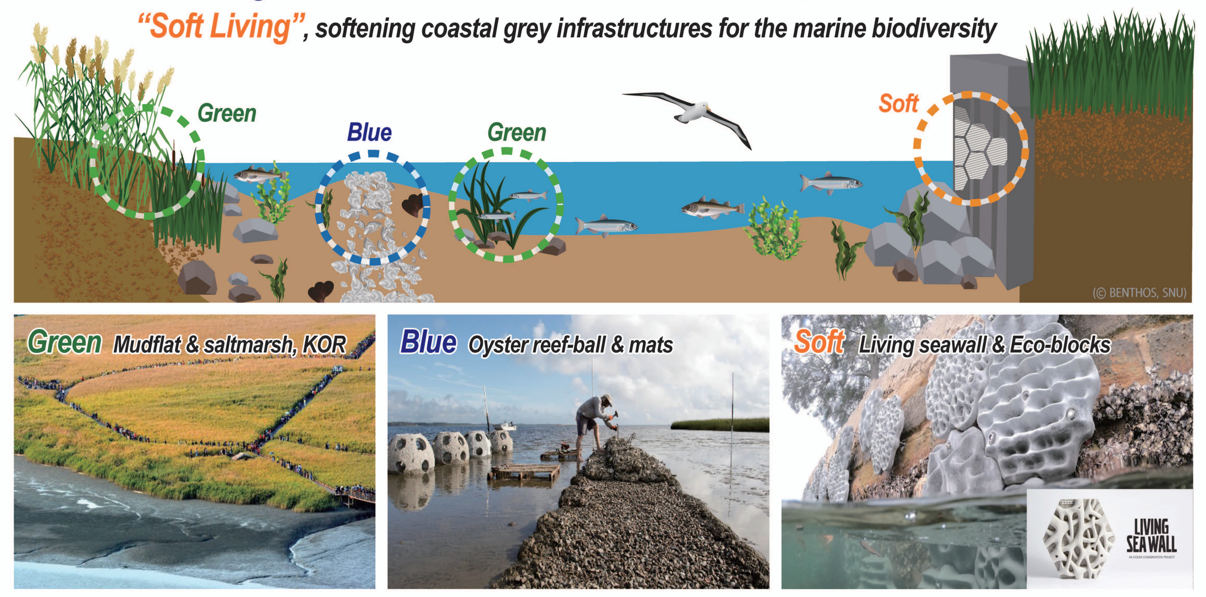
Green, Blue, and Soft Living techniques

Marine biodiversity▲, coastal erosion▼, and buffering marine acidification

"Green Living", planting halophytes and seagrasses for the carbon sink increase

"Blue Living", building oyster reefs etc. for the coastal erosion prevention

"Soft Living", softening coastal grey infrastructures for the marine biodiversity



Education and promotion for the public

Trio of science, policy, and media

Many efforts for success of CND, Education and promotion to the pubulic

For the better future of Korean coasts, Infographic of CND