

**COMPARISON OF VEGETATION-INVERTEBRATE RELATIONSHIPS
ON NATURAL AND RESTORED MUDFLATS IN
NORTHEAST AND NORTHWEST PACIFIC ESTUARIES**

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BOO JOO KOO AND SI-WAN LEE**

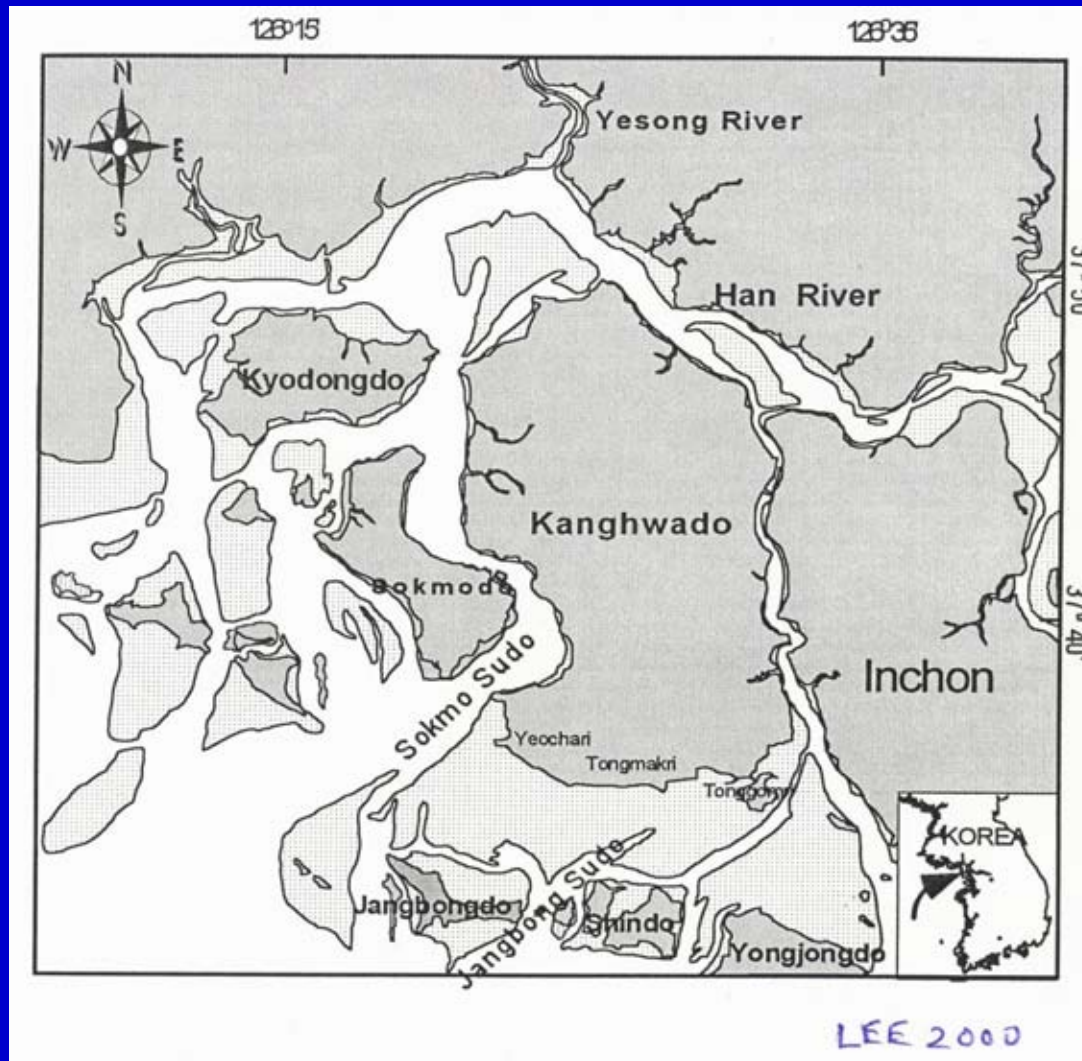
OBJECTIVES – AN OVERVIEW TALK

**DESCRIBE SALT MARSH AND MUDFLATS IN KOREA AND
BRITISH COLUMBIA, CANADA**

**DESCRIBE INVERTEBRATES LINKED TO SAME AND ROLE IN
THE ECOSYSTEMS**

DESCRIBE ASPECTS OF MARSH RESTORATION IN THE TWO AREAS

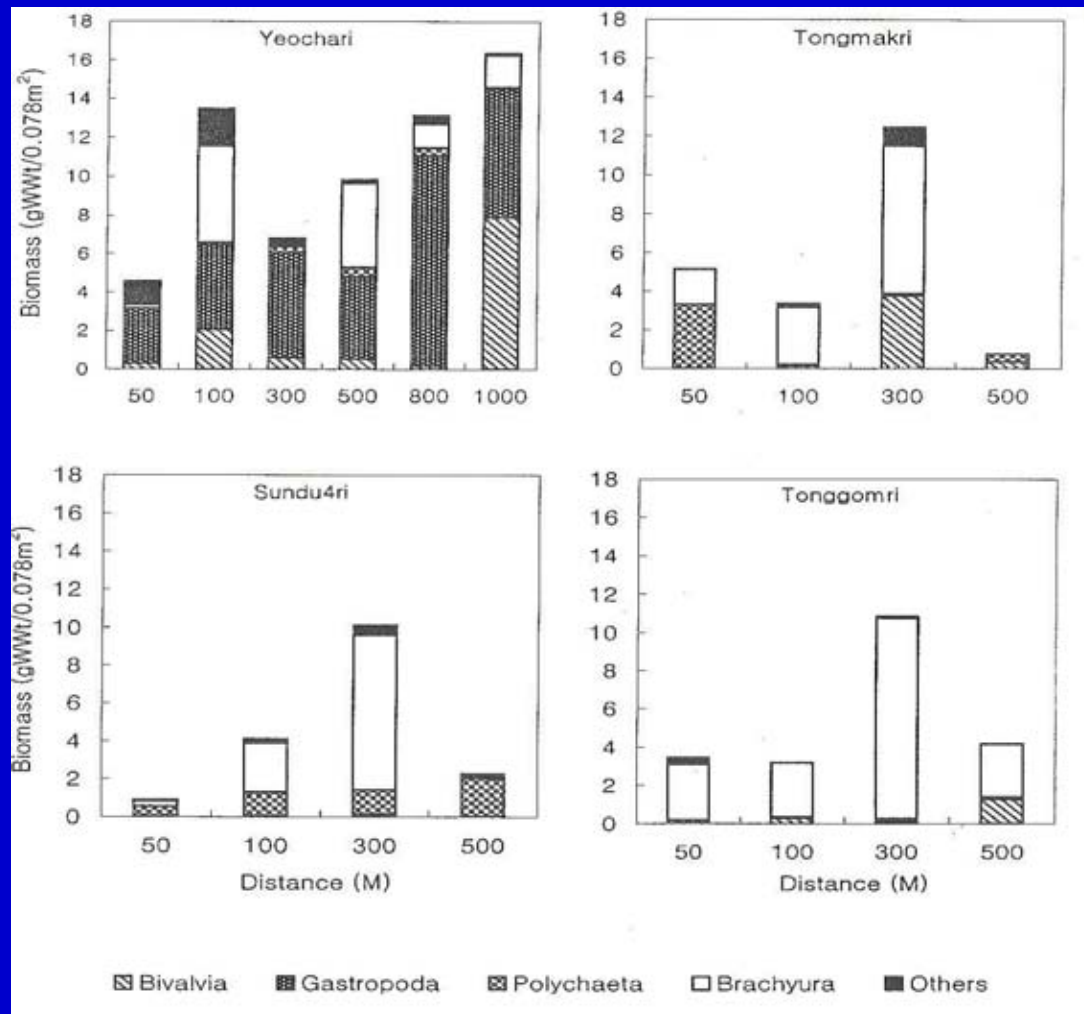
**CONCLUSIONS:
COMPARISON OF MARSH STRUCTURE AND FUNCTION
AND POSSIBLY DIFFERING CONTROLLING FACTORS IN THE TWO
AREAS**



MAP SHOWING THE KANGHWA ISLAND AND ESTUARY OF HAN AND YESONG RIVERS, KOREA. DOTTED AREAS ARE TIDAL FLATS



***SUEDA* ON MUDFLATS – HAN RIVER
ESTUARY, KOREA**



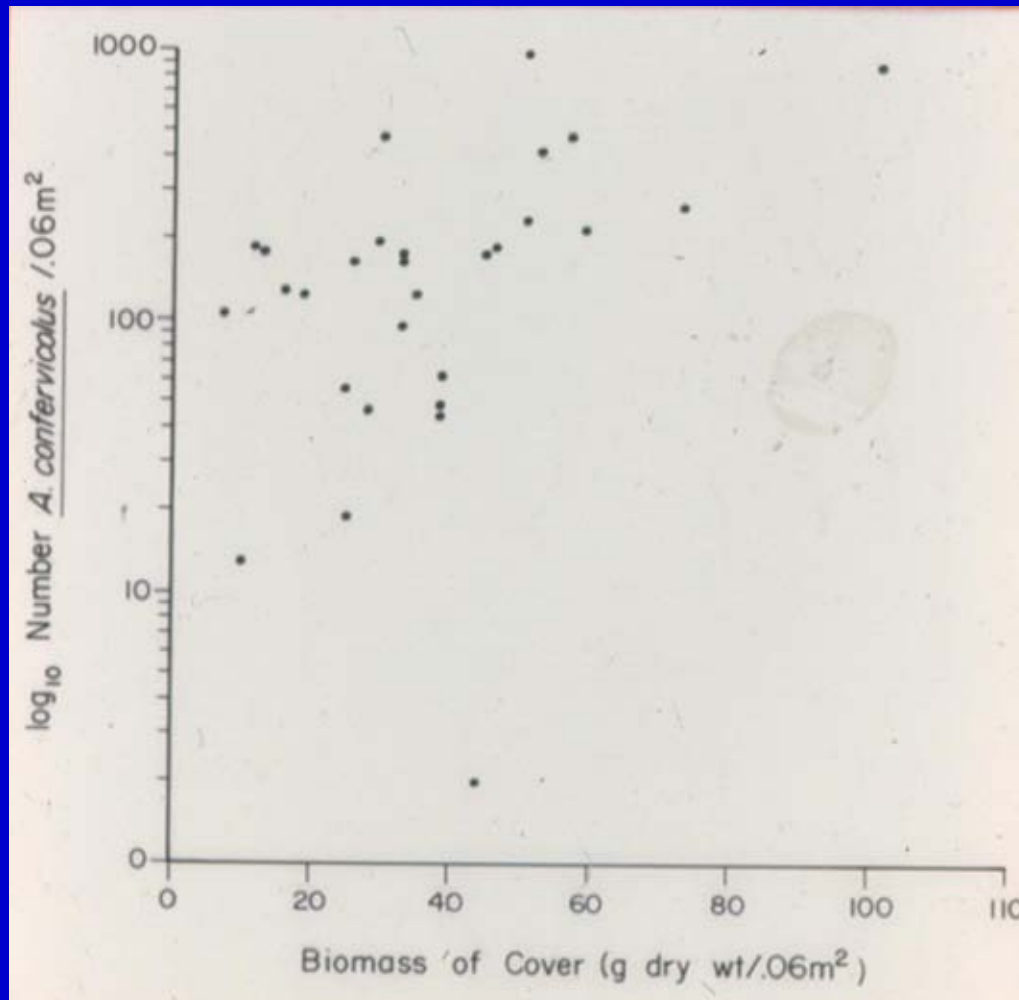
INVERTEBRATE BIOMASS (GWWT/0.078M²) IN RELATION TO DISTANCE FROM SHORE ON MUDFLATS, KANGHWA ISLAND, KOREA (FROM LEE, 2002)



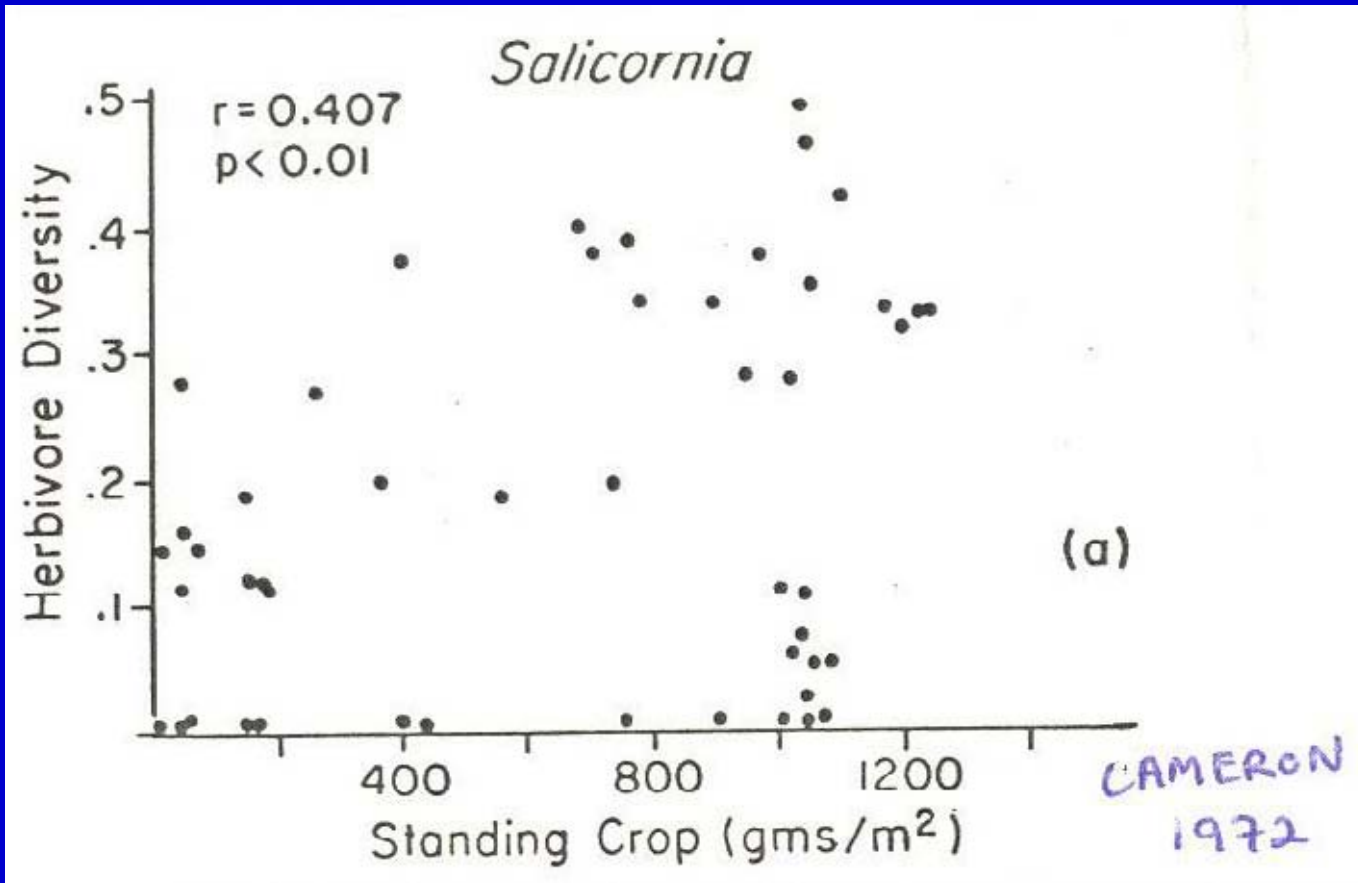
ZONATION ON BOUNDARY BAY, FRASER RIVER ESTUARY, BC



**CAREX – BRACKISH MARSH, BUTE INLET,
BC**



**CAREX BIOMASS AND GAMMARID
ABUNDANCE, SQUAMISH RIVER
ESTUARY, BC**



SALICORNIA BIOMASS AND HERBIVORE DIVERSITY, SAN FRANCISCO BAY, CA

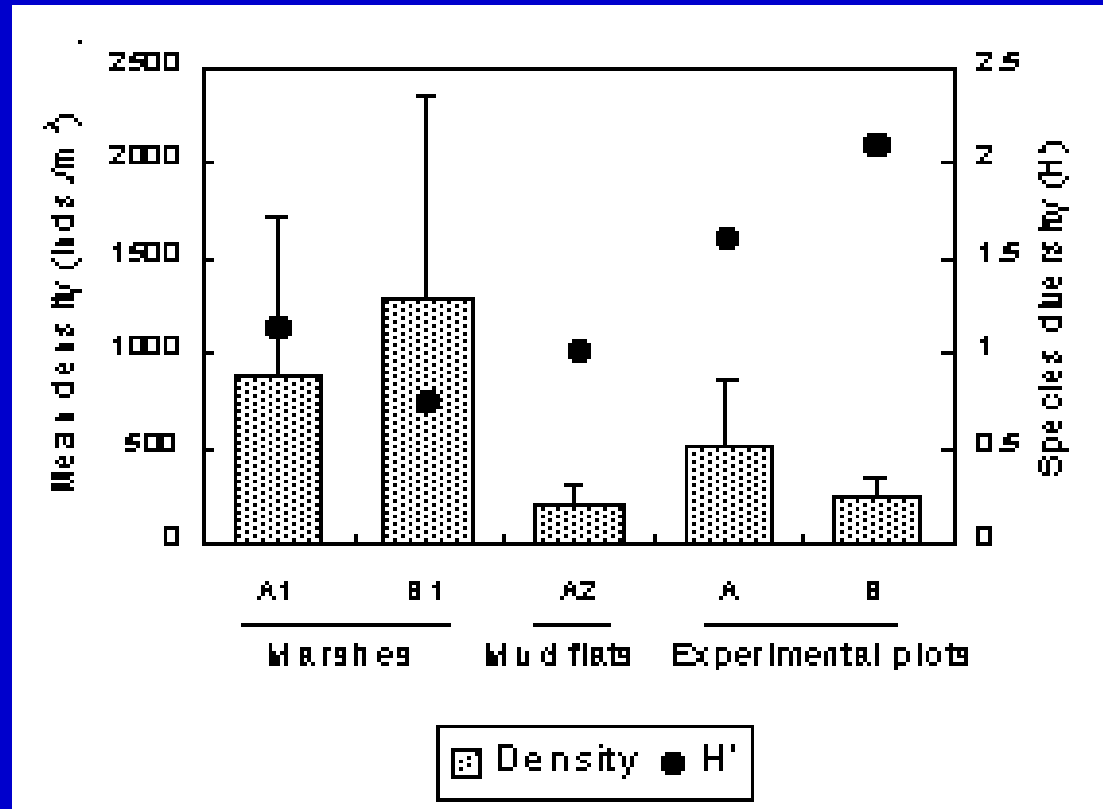
A



B



RESTORATION EXPERIMENT USING FENCE TO TRAP SEDIMENTS ON A MUD FLAT NEAR SEOUL, KOREA (FROM KOO AND JE 2002)



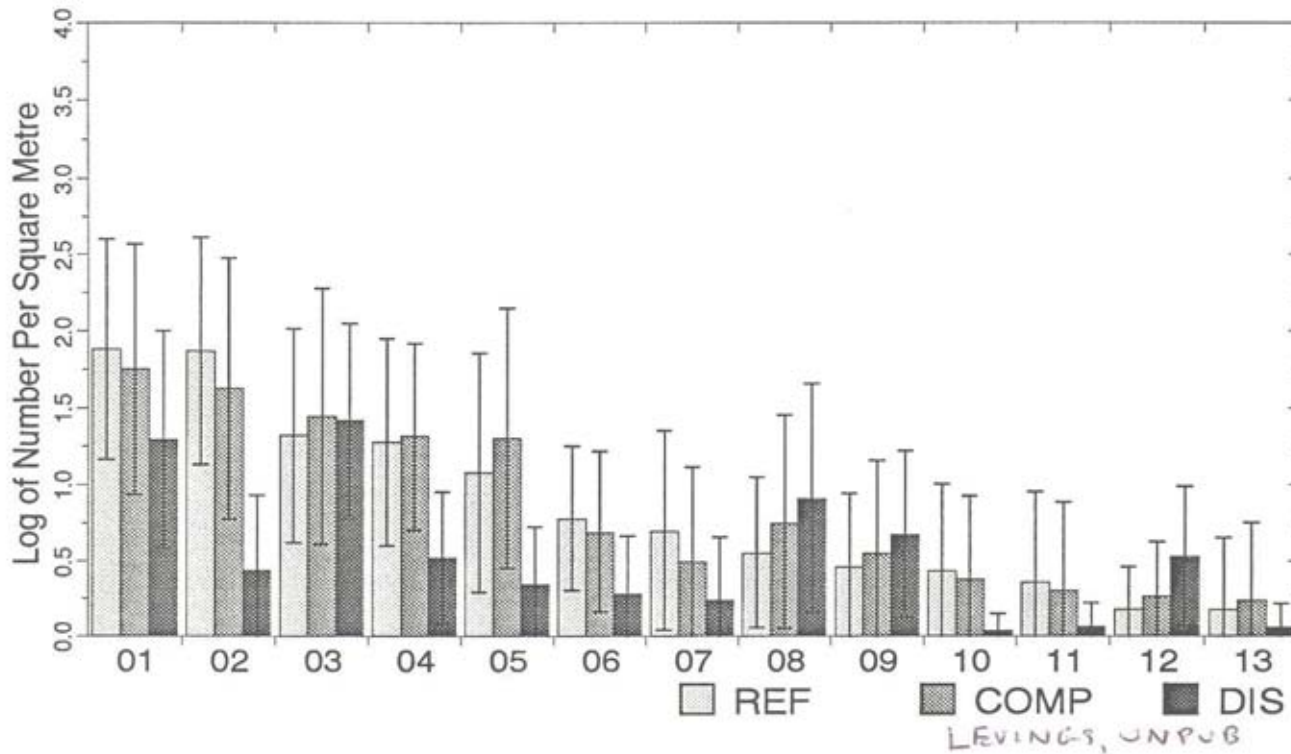
**ABUNDANCE AND DIVERSITY OF INVERTEBRATES
AT THE EXPERIMENTAL RESTORATION SITE NEAR
SEOUL, KOREA (FROM KOO AND JE, 2002)**



**CAREX RESTORATION – FRASER RIVER
ESTUARY, BC**



**CONSTRUCTED *SALICORNIA* MARSH – NEAR
BOUNDARY BAY, BC**



Invertebrates Legend

01 - Harpacticoids
 02 - Ostracods
 03 - Copepod nauplii
 04 - Chironomid larvae
 05 - Oligochaetes
 06 - Acarina
 07 - Collembola

08 - Cladocerans
 09 - Cyclopoids
 10 - Ceratopogonid larvae
 11 - Polychaetes
 12 - Calanoids
 13 - Other Malacostracans

**INVERTEBRATES IN RESTORED CAREX
 MARSHES – FRASER RIVER ESTUARY, BC**

CONCLUSIONS

COMPARISON OF POSSIBLE CONTROLLING FACTORS OF ECOLOGICAL FUNCTIONING OF SALT MARSHES REGIONAL SEAS OF THE NW AND NE PACIFIC

POSSIBLE FACTOR	WEST COAST KOREA (HAN RIVER ESTUARY)	WEST COAST CANADA (FRASER RIVER ESTUARY)
LATITUDE	37.5 °N	49.0 °N
TEMPERATURE (ANNUAL MEAN, AIR)	12 °C	10 °C
TIDAL RANGE	MACROTIDAL	MESOTIDAL
TEMPERATURE (SUMMER, WATER)	24 – 26 °C	15 – 20 °C
SALINITY	4 – 33 ‰	0 – 28 ‰
SEDIMENTS IN MARSH ZONE	SAND	MUD
PRIMARY PRODUCERS	SUEDA, PHRAGMITES	SALICORNIA, CAREX
SECONDARY CONSUMERS	INSECTS, CRABS	INSECTS, AMPHIPODS
TERTIARY CONSUMERS	BIRDS, GOBIES	BIRDS, COTTIDS, SALMONIDS