

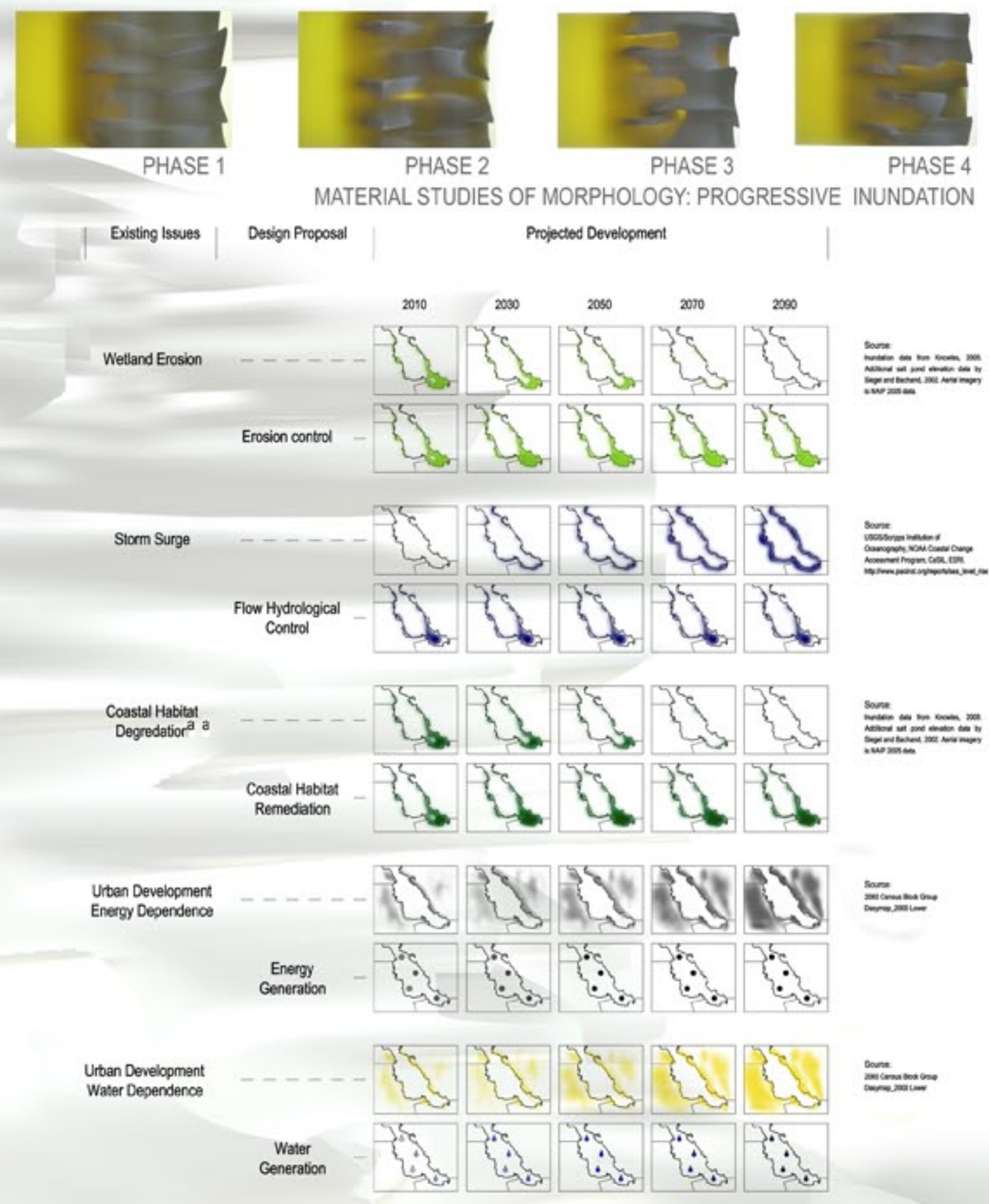
BIO.ELASTICITIES

HYDROFLOW CONTROL

ZIG-ZAG COASTAL TOPOLOGY

1:10,000 MACROSCALE

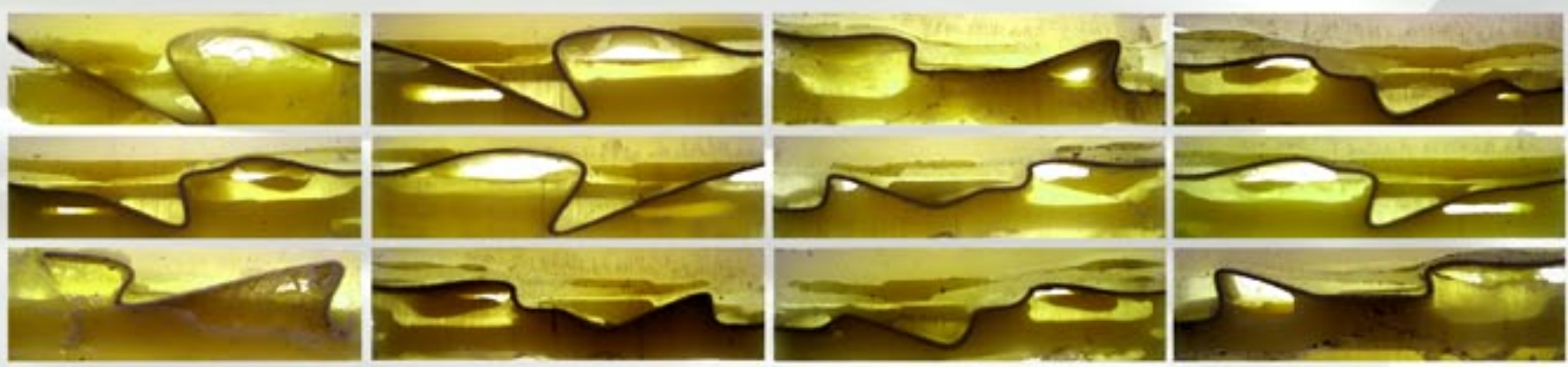
GLOBAL POPULATION DISTRIBUTION SITUATES THE HIGHEST CONCENTRATIONS OF HUMANKIND ON OR NEAR COASTLINES. URBAN SHORELINE DEVELOPMENT COINCIDING WITH EXTREME WEATHER EVENTS PARTICULARLY DUE TO INUNDATIONS ARE RESULTING IN THE DECLINE OF WETLAND FORESTS. THE PROJECTED FLOODING CAUSED BY CLIMATIC MISBALANCE ESPECIALLY BY SEA LEVEL RISE REQUIRES A REASSESSMENT OF URBAN COASTAL DEVELOPMENT TO CONSERVE ESTUARY HABITATS PROMOTING BIO-COMPATIBILITY. UP TO DATE URBAN SHORELINE CONSTRUCTIONS ARE FUNDAMENTALLY BASED ON PRINCIPLES OF RIGIDITY AGAINST THE INHERENT STRUCTURAL MATERIAL PROPERTIES OF COASTAL ZONE ECOLOGIES CONTRIBUTING TO COASTAL EROSION THROUGH REMOVAL OF SEDIMENT ADJACENT TO STRUCTURES AS WELL AS OF AGRICULTURAL LAND DEPLETION DUE TO CHANGES IN ALKALINITY AND TEMPERATURE. URBAN AND NATURAL COASTAL HABITATS BY LACK OF APPROPRIATE SYSTEMS COMPATIBILITY ARE THUS EXPOSED TO DEGENERATIVE CONDITIONS. TO COUNTERACT SUCH PROCESSES WE PROPOSE INTEGRAL BIO-COMPATIBLE AND ADAPTABLE INFRASTRUCTURES AS REGENERATIVE URBAN DEVELOPMENT TO CONTRIBUTE FOR THE EQUILIBRIUM OF HYDROLOGICAL FLOWS AND THROUGH IT OF COASTAL HABITATS. THE PROJECT'S NAME BIO.ELASTICITIES REFERS TO THE MATERIAL AND STRUCTURAL SYNERGY OF CITIES THAT ARE PROGRAMMATICALLY AND PHYSICALLY ELASTIC AND BIO-COMPATIBLE. WITH THIS AIM A SYSTEM THAT REGENERATES ECOSYSTEMS AND CAPITALIZES ON THE RESOURCE OF SALINE WATER AND FLOODING CORRESPONDINGLY FOR ENERGY GENERATION AND CLEAN WATER AS BYPRODUCT IS PRODUCED. THE PROPOSED INFRASTRUCTURE CONSISTS OF A SET OF INTERDEPENDENT CYCLES THAT PROCESS MATERIAL FLOWS AND PRODUCE ENERGY BY INCORPORATING BIO-ENGINEERING PRINCIPLES OF BIO-COMPATIBILITY ACROSS SCALES. THE SYSTEMS ARE:



COASTAL ECOSYSTEMS REGENERATION

ELASTIC INFRASTRUCTURE BIOCERAMIC SALT MARSHES; COASTAL SHRUB/CHAPARRAL

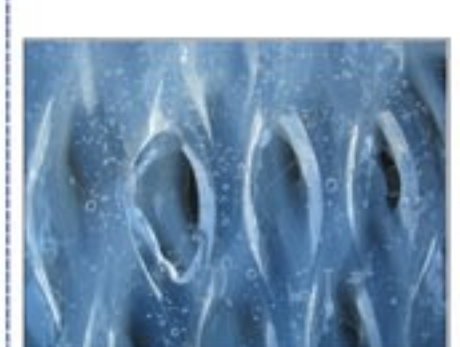
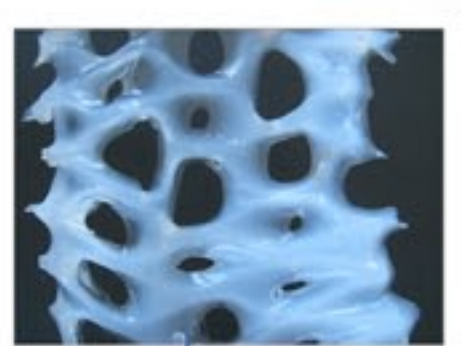
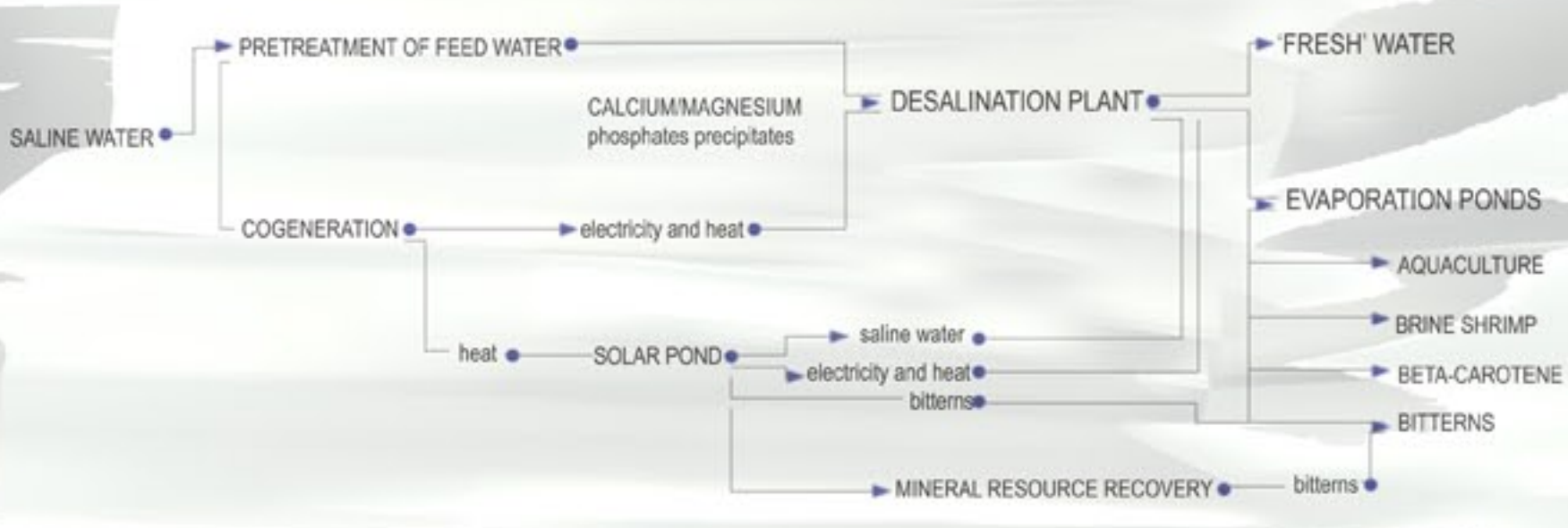
1:100 MESOSCALE



ENERGY, WATER AND AQUACULTURE GENERATION

SALT PONDS; DESALINATED WATER (BYPRODUCT), BITTERN FOR ENERGY GENERATION (BYPRODUCT) AQUACULTURE: FISH, SHRIMPS, ALGAE (BYPRODUCT)

10:1 MICROSCALE



ZIG-ZAG EDGE
(SHOCK WAVE & TOLERANCE FOR HYDROLOGICAL LOW FLOWIVITY)

SALT MARSHES
(FLOOD MIGRATION CONTROL ZONE)

SATURATED SALINE WATER
(LOW CONNECTIVE ZONE WITHIN STORAGE)

LOW SALINITY WATER
(NON-CONNECTIVE ZONE)

FRESH WATER (DESALINIZED)
(UPPER CONNECTIVE ZONE)

FILTERING MEMBRANE
(SALINITY RETENTIVE MATRICES THAT ACT AS CHARACTERISTIC FOR ENABLING CONDUCTION OF FLUIDS THROUGH CHANNELS)

SALT BITTERN
(REGENERATIVE ENERGY SOURCE TO PROVIDE ELECTRICAL ENERGY FOR URBAN DEVELOPMENT)

ELASTIC INFRASTRUCTURE
(FLOW-ARREST STRUCTURE FOR ARCHITECTURAL ANCHORING OR FLUCTUATING PROGRAMMATIC URBAN FORMING)

SUB-ELASTIC INFRASTRUCTURE
(NON-ARREST STRUCTURE TO ADAPT TO WATER FLOWS AND SEISMIC RESISTIVE TENSORITY/POINT SYSTEM)

DESALINATED WATER
(CHANNELLED FROM SALT PONDS TO FEED URBAN DEVELOPMENT)

COASTAL SHRUB/CHAPARRAL
(REGENERATION OF NATIVE COASTAL ZONES AND CHANNELS)

LOW SALINITY WATER
(PERMEABLE MEMBRANE CHANNELLED FROM SALT PONDS)

AQUACULTURE
(INPUT WATER OF LOW SALINITY FROM SALT PONDS)