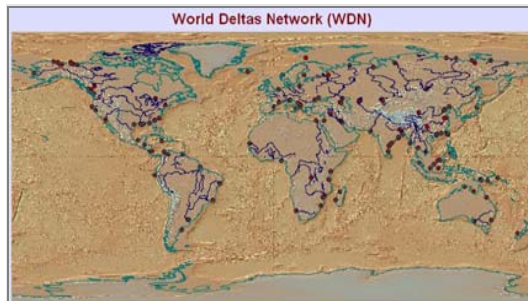


The World Deltas Network

- The World Deltas Network is a data, information, and research support service for deltas, to advance integrated science in the coastal zone, spanning physical, biological, and sociological disciplines. It was initiated following recommendations of a Coastal Working Group of the Global Terrestrial Observing System (GTOS).

Objectives

- To further knowledge about integrated science and ecosystem-based management in river-delta-ocean systems, focusing on deltas as key components, indicators, and integrators.

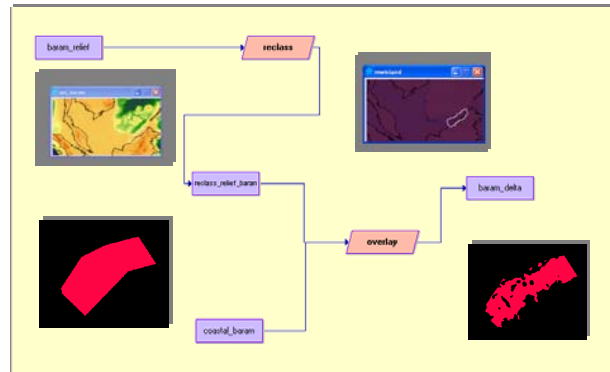


Benefits of a World Deltas Database

- Deltas are extremely important units of the coast, and their associated river and marine systems. They are key integrators and indicators of processes in entire watersheds, and key filters and transformers of materials and energy for the marine environment.
- They are important regions for humanity in their own right, providing ecosystem goods and services, and they are highly sensitive indicators of change.
- The scientific value of a global deltas database includes:
 - To improve understanding of deltas individually and in comparison.
 - To use change in deltas across regions or the globe as a natural indicator of broad scale phenomena, such as climate change and variability, and human impact on watershed and delta hydrology.
 - To improve understanding of deltas as components of the white water to blue water system, so that system models can be developed for forward and reverse prediction.

Methodology

- The work procedure involved includes:
 - to define the large AOI, from the elevation contour at the mouth of the alluvial valley out to the bathymetric contour associated with the shelf-break or equivalent
 - to define the delta proper by narrowing the relief contour range until adjacent deltaic fans are distinguished.
- The initial phase was accomplished using a GIS macro-modeler (IDRISI Kilimanjaro). In the future, we will substitute a multi-dimensional niche-space model.



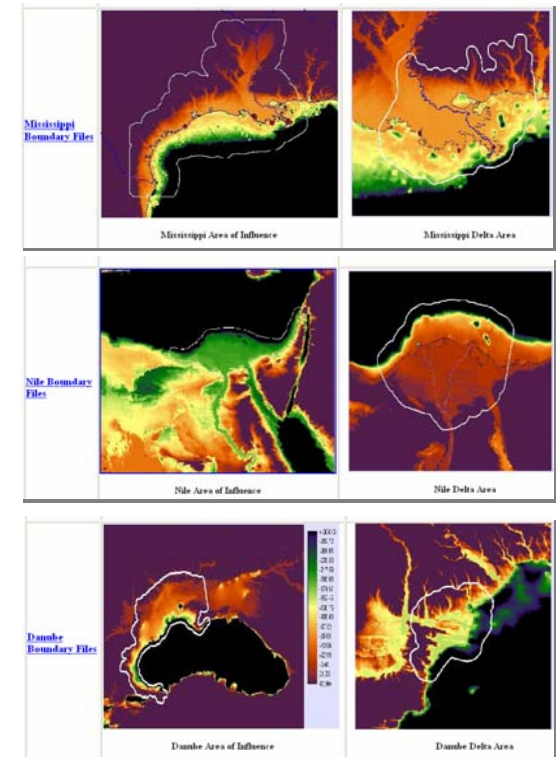
Delta Loss

DELTA	OPEN WATER NET LOSS	AVE. RATE/ YR	NET LOSS BY AGRICULTURAL AND INDUSTRIAL USE	AVE. RATE/ YR	TOTAL WETLAND LOSS	AVE. RATE/ YR	Area of delta Measurement
Danube	NA	NA	83	6	83	6	3,066
Ganges/ Brah.	783	65	3,507	292	4,290	358	5,930
Indus	960	120	635	79	1,595	199	1,380
Mahanadi	116	39	22	7	94	31	1,440
Mangoky	43	3	90	6	133	9	1,449
Mississippi	252	21	112	9	364	30	1,904
Niger	81	5	7	0.5	88	6	1,110
Nile	2.4	0.2	12	0.7	14	0.8	872
Shatt el Arab	1,610	101	5,089	318	6,699	419	1,340
Volga	100	6	177	10	277	16	1,420
Yellow	8	1	727	66	735	67	1,960
Yukon	1,100	157			1,100	157	4,654
Zambezi	24	2	325	23	349	25	2,705
TOTAL LOSS	5,104		10,786		15,845		30,225

Source: Coleman & Hal, 2005

Results - Delta Boundaries

- These are vector GIS boundary files for deltas in the World Deltas Database, which define the "Area of Interest" (AOI) for the purposes of the WDN. These boundaries are intended to be the standard area used to subset spatial data showing the boundary in a relief image for reference.



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