



Roseaux River

**CRITERIA FOR
SELECTING PRIORITY
WATERSHEDS
IN HAITI**

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AUGUST 2, 2006**

GOAL Develop a plan to reforest areas in Haiti that are vulnerable to erosion and pose significant danger to human health and safety

SOILS



POPULATION



INFRASTRUCTURE

WATERSHED VULNERABILITY ANALYSIS

OBJECTIVE Identify and rank the vulnerability of Haiti's watersheds

- ADVANTAGES**
- Decision-making Tool
 - Rapid Appraisal
 - Defensible Logic
 - Effective Framework
 - Reference Database

APPROACH Identify the key factors of vulnerability

Weight the factors

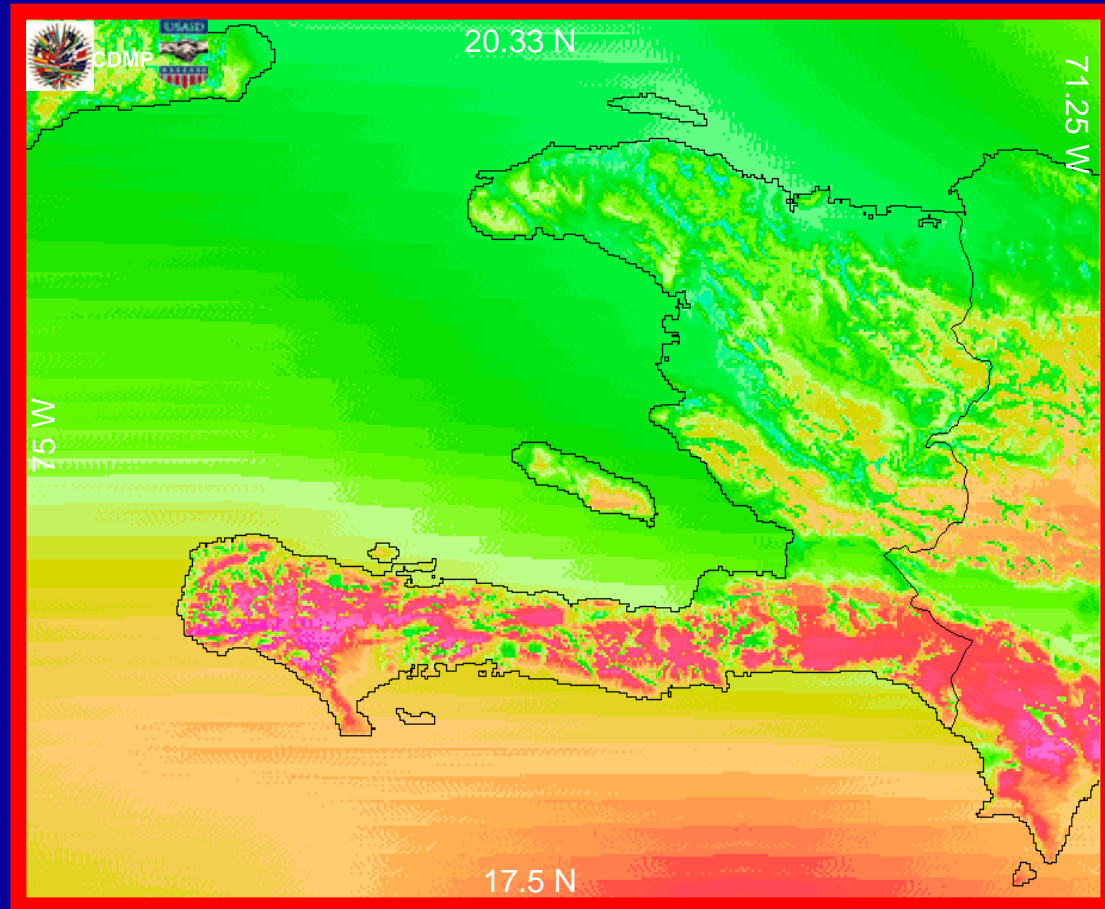
Score the watersheds, determine **Vulnerability Index**

Rank the watersheds

HURRICANES

50-YR RETURN TIME

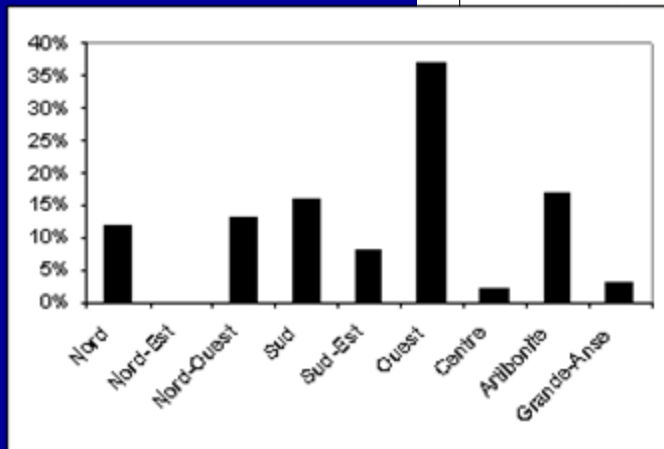
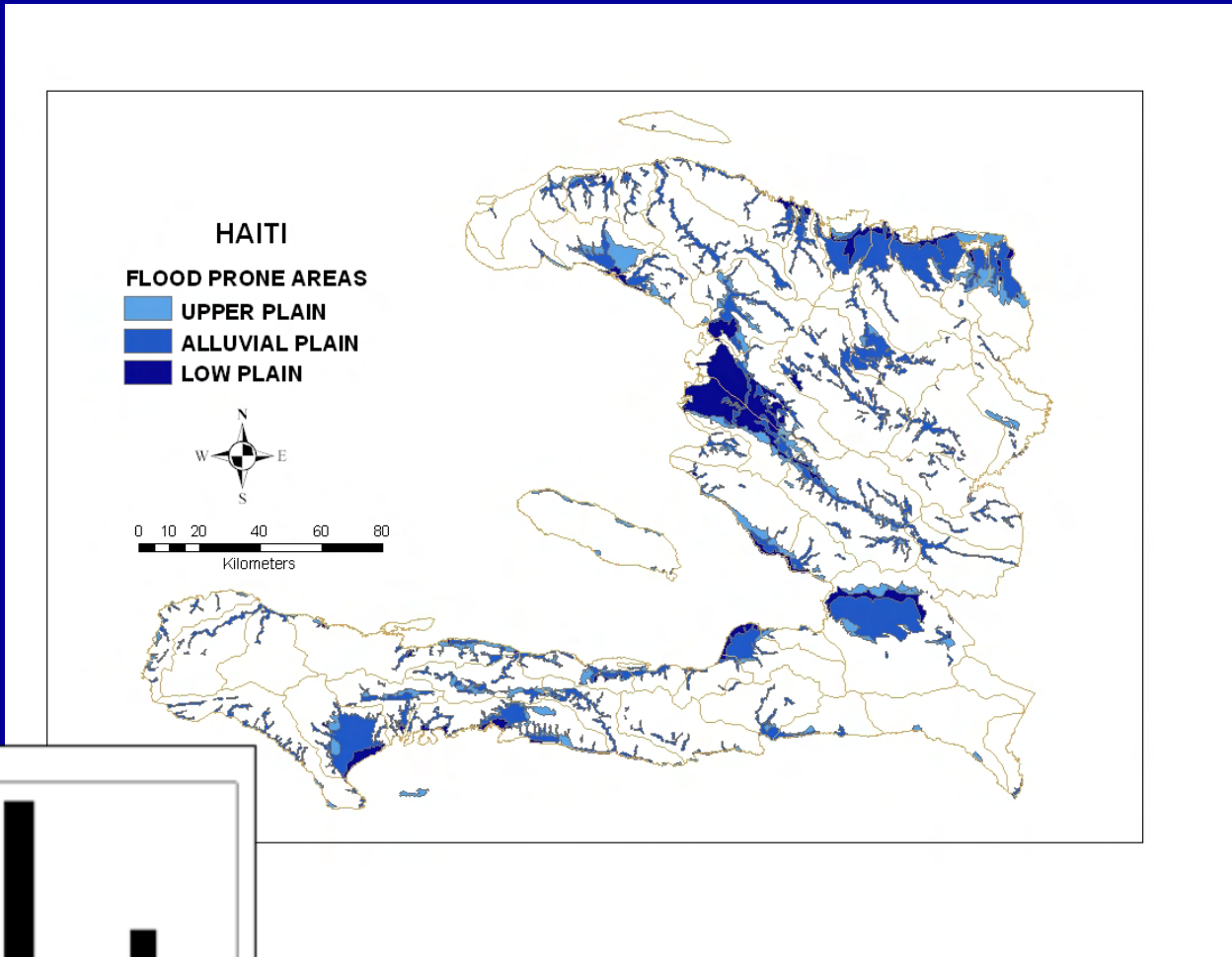
1. Cap Haitien: 34 m/s (I)
2. Gonaïves: 35 m/s (I)
3. Port-au-Prince: 40 m/s (I)
4. Les Cayes: 48 m/s (II)



WIND SPEEDS

Cat. Storm	0	1	2	3	4	5
knots	25	50	75	100	125	150
mph	25	50	75	100	125	150
kph	50	100	150	200	250	300
m/s	10	20	30	40	50	60

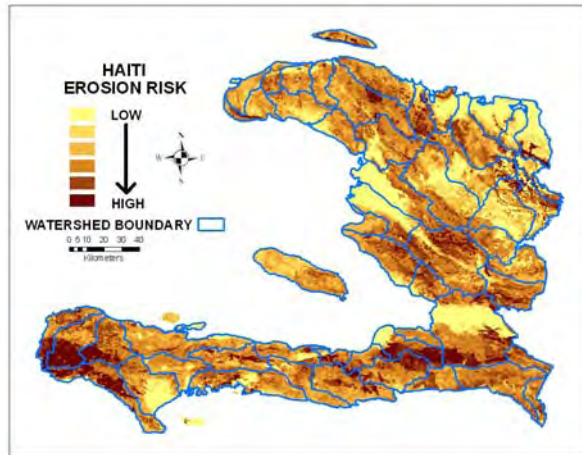
FLOODS



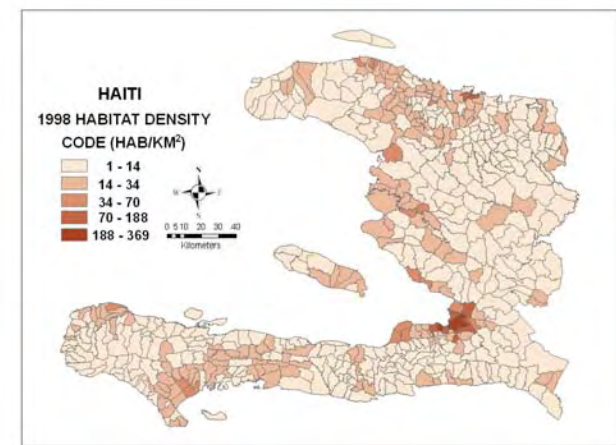
FLOOD FREQUENCIES (1968-97)

KEY VULNERABILITY FACTORS

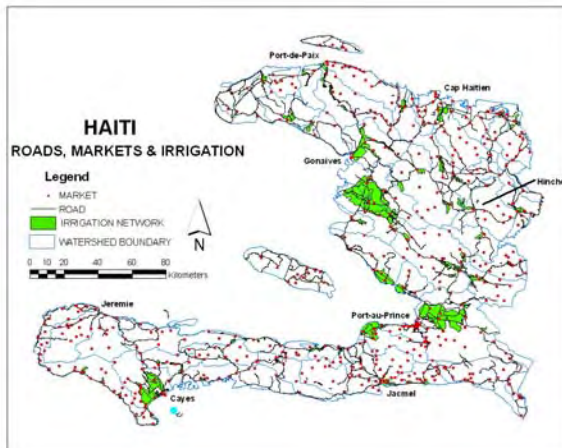
RISK OF SOIL EROSION



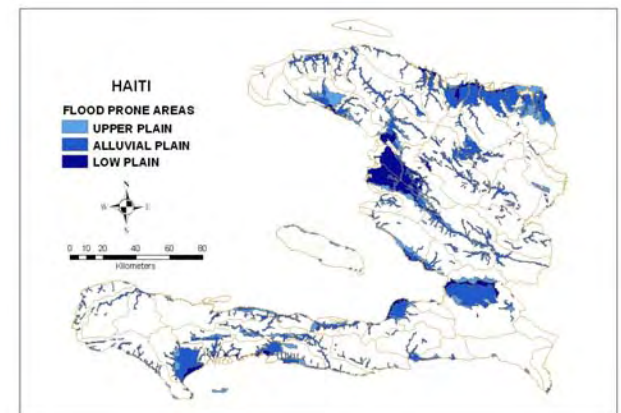
HABITAT DENSITY



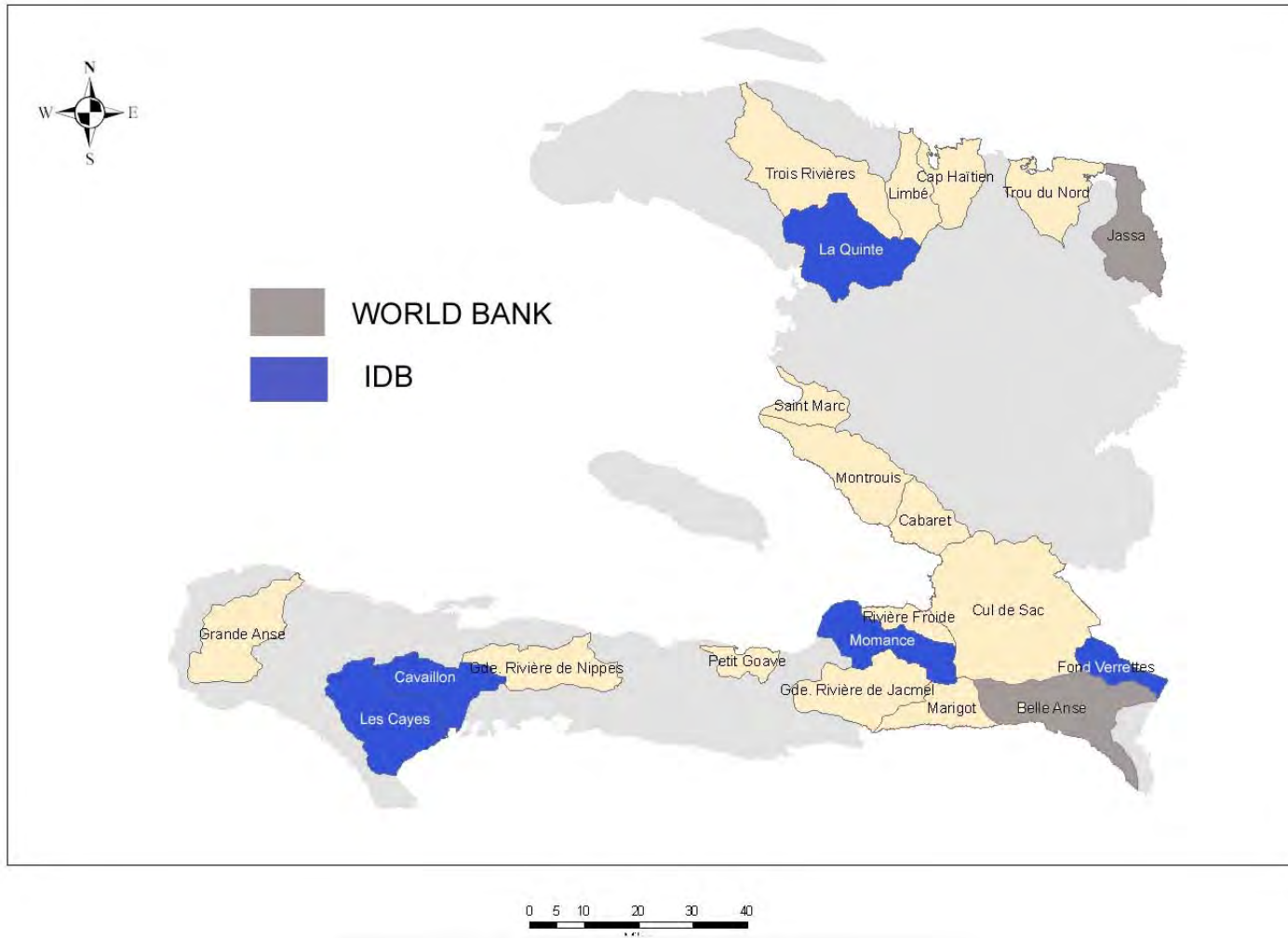
INFRASTRUCTURE (R, M, IP)



FLOOD PRONE ZONES



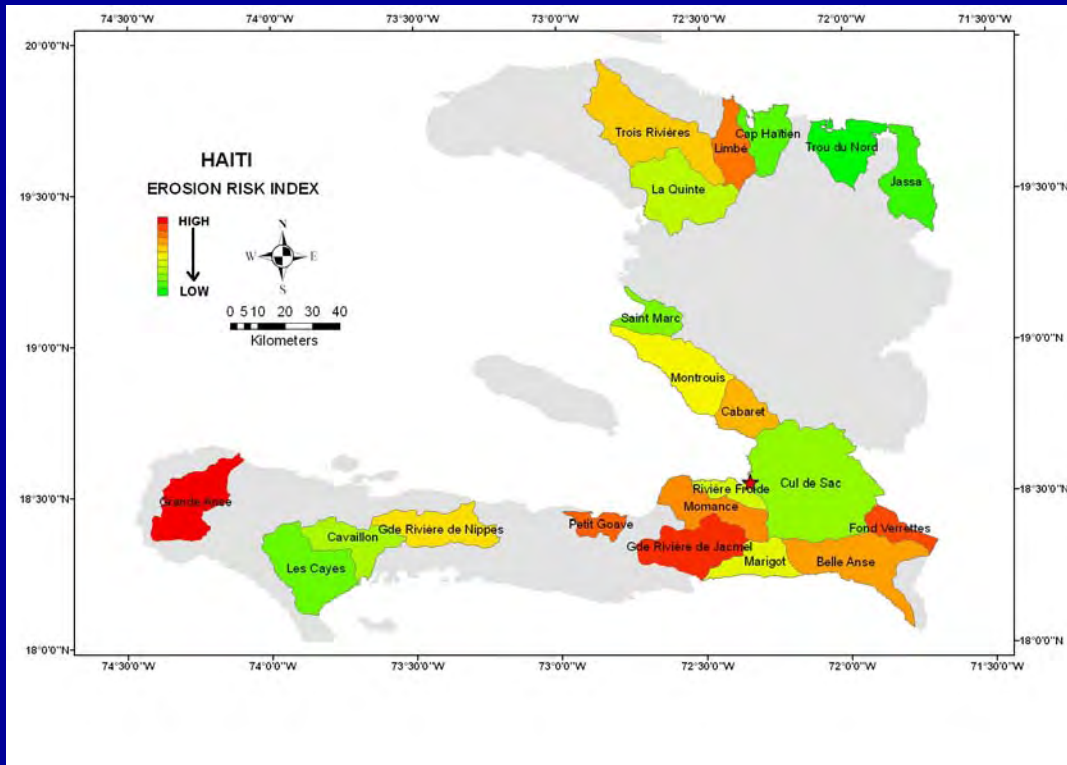
PRIORITY WATERSHEDS



SUMMARY OF WATERSHED INDICES

HIGH EROSION RISK INDEX

GRAND ANSE, RIV. JACMEL, FOND VERRETTES, PETIT GOAVE



- Southern Peninsula
- Highest Hurricane Risk
- Important Protected Areas
 - Macaya National Park
 - La Visite National Park
 - Pine Forest Reserve

Rank	Watershed	Index
1	Grande Anse	100
2	Riv. de Jacmel	84
3	Fond Verrettes	83
4	Petit Goave	81
5	Limbé	78

Average Watershed Index: 57

HIGH EROSION RISK

+

HIGH HURRICANE RISK

+

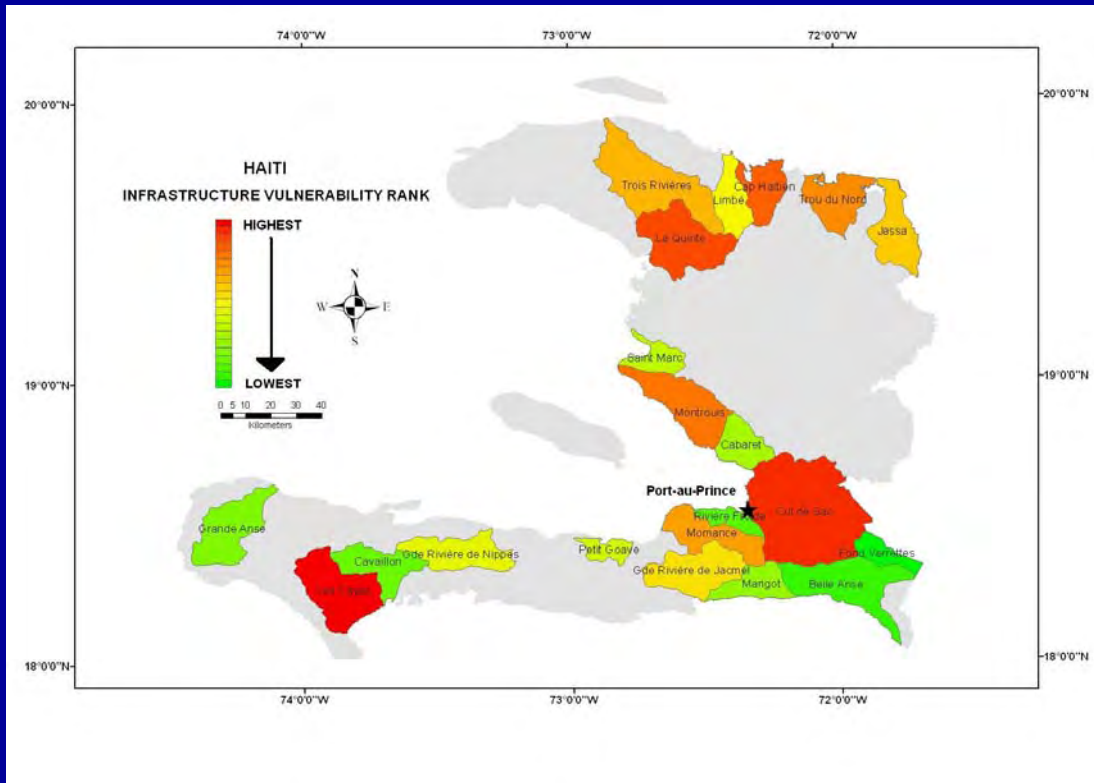
NATIONAL PARKS & PINE FOREST RESERVE

PRIORITY WATERSHEDS

INFRASTRUCTURE VULNERABILITY INDEX

VERY HIGH CAYES, LA QUINTE, CUL DE SAC

HIGH CAP HAITIEN, TROU DU NORD, MONTRUIS



- HIGH COASTAL POP. DENSITY
- ELEVATED FLOOD RISK
- HIGH INFRASTR. VULN. INDEX

Rank	Watershed	Index
1	Les Cayes	74
2	La Quinte	71
3	Cul-de-Sac	68
4	Cap Haitien	31
5	Trou du Nord	29

Average Watershed Index: 15

HIGH POPULATION DENSITY



HIGH FLOOD RISK



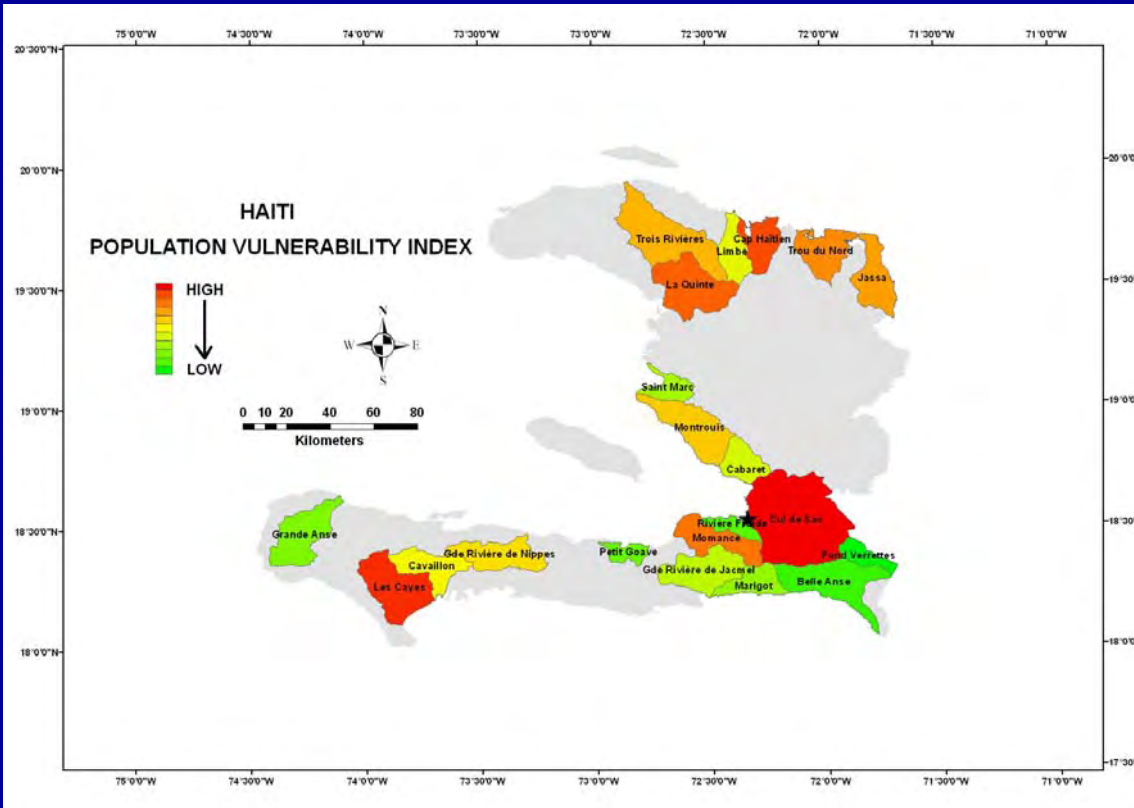
HIGH INFRASTRUCTURE VULNERABILITY

PRIORITY WATERSHED

POPULATION VULNERABILITY INDEX

HIGHEST CUL DE SAC (PORT-AU-PRINCE)

HIGH LES CAYES, MOMANCE (LEOGANE), CAP HAITIEN, LA QUINTE (GONAIVES)



- HIGH COASTAL POP. DENSITY
- HIGH FLOOD RISK
- HIGH SOIL QUALITY INDEX

Rank	Watershed	Index
1	Cul-de-Sac	100
2	Les Cayes	30
3	Momance	23
4	Cap Haïtien	20
5	La Quinte	18

Average Watershed Index: 7

HIGH COASTAL POPULATION DENSITY

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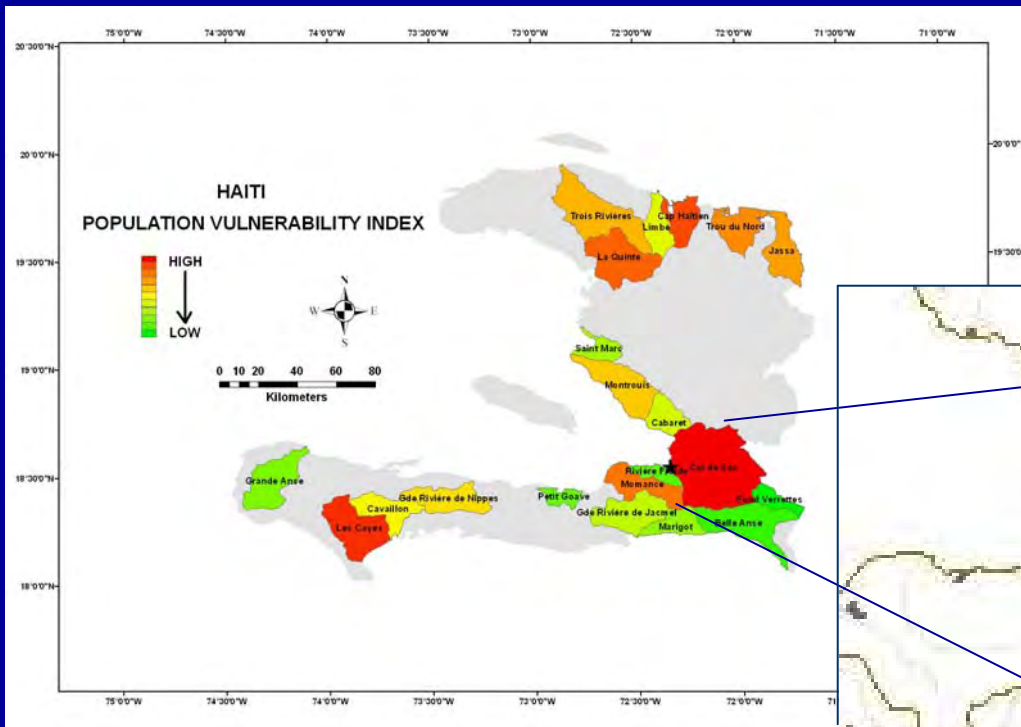
HIGH FLOOD RISK

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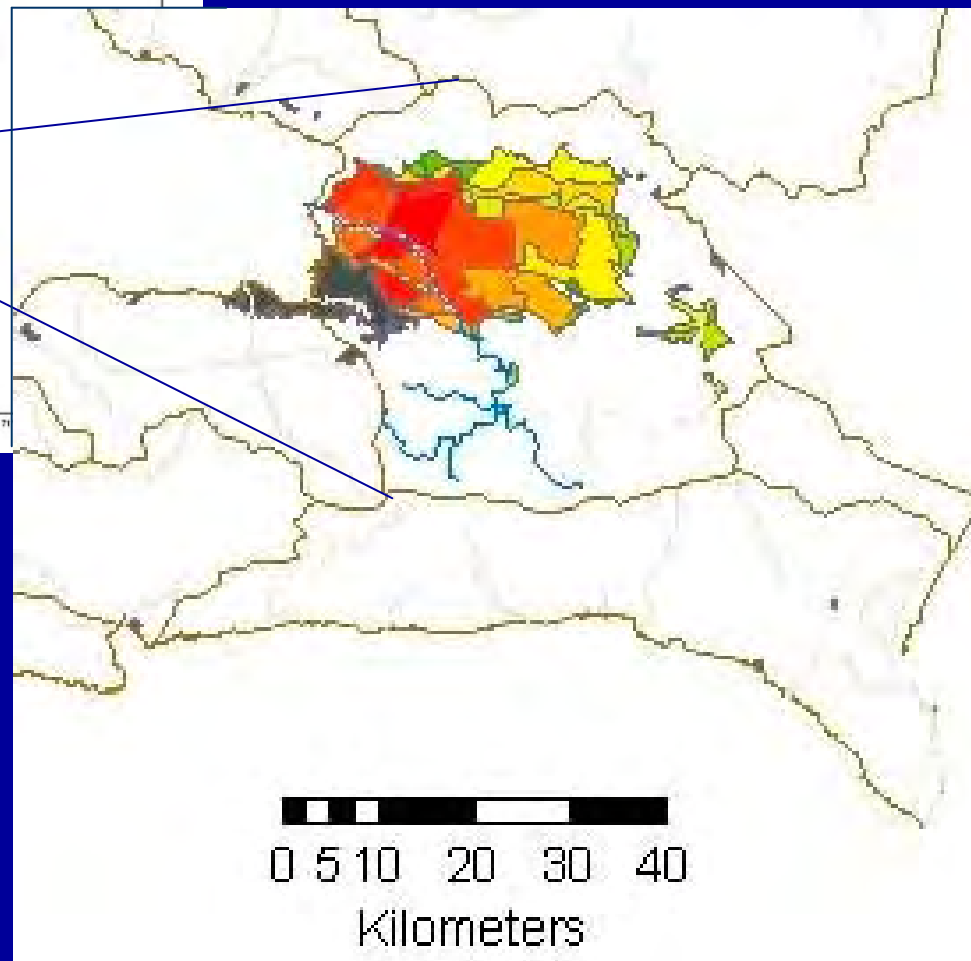
HIGH SOIL QUALITY

PRIORITY WATERSHEDS

CUL-DE-SAC WATERSHED



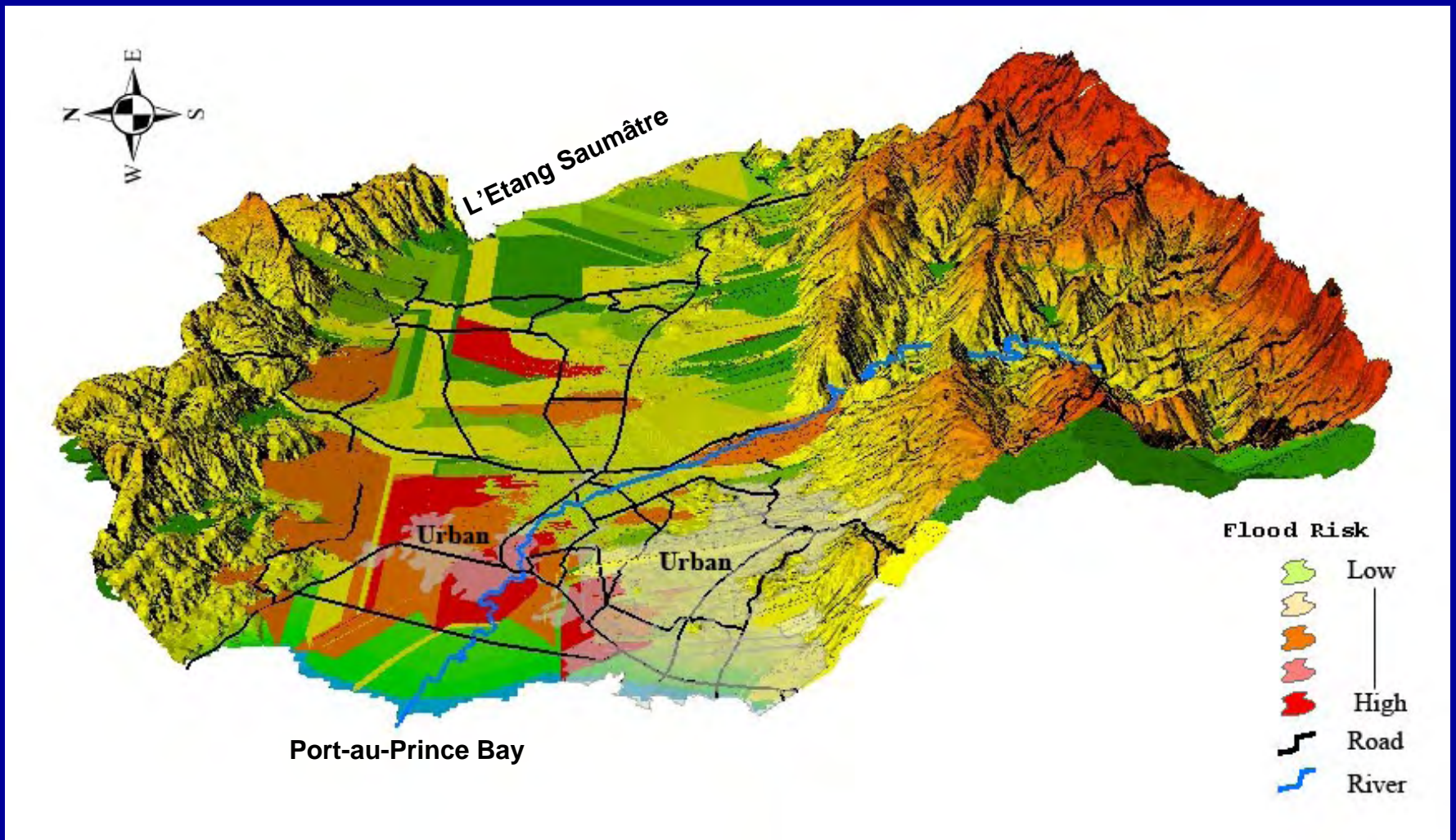
GRISE RIVER FLOOD RISK MAP



- CONCENTRATIONS OF VULNERABILITY
- UPSTREAM / DOWNSTREAM CONUNDRUM
- URBAN VS RURAL INTERVENTIONS
- “WE ALL LIVE DOWNSTREAM”

CUL-DE-SAC WATERSHED

GRISE RIVER FLOOD RISK MAP



RECOMMENDATIONS

GROUP 1: CUL-DE-SAC (PORT-AU-PRINCE)

Watershed that serves the most vulnerable population

- Develop a multi-donor strategy to capture synergies and engage municipal government
- Assist the development of client-oriented neighborhood groups to provide essential services
- Establish a task force to create a flood map of high risk areas of the metro area
- Develop NRM strategies to meet upland conservation and economic goals

GROUP 2 CAYES, CAP HAITIEN, TROU DU NORD, LA QUINTE

Watersheds with high densities of coastal population, high vulnerability indices and high soil quality index

- Support government ministries to improve strategies in disaster preparedness
- Develop partnerships to improve risk management design of priority infrastructure
- Increase economic productivity of rich soil base
- Engage municipal governments to develop essential policy: e.g., flood zones, building codes

GROUP 3 SOUTHERN PENINSULA: GRAND ANSE, RIVIÈRE JACMEL, FOND VERRETTES

Watersheds of high priority value as protected areas and low impact development

- Develop a national heritage strategy with Ministry of Environment and international NGOs
- Develop approaches to co-management of public lands
- Develop tourist potential and supporting infrastructure
- Expand NRM interventions favoring perennial polycultures, producer & water user groups