



ST. MARYS RIVER
REMEDIAL ACTION PLAN
GEOZONES AND HABITAT



ST MARYS RIVER RAP
FLORA AND FAUNA TASK GROUP

MEADOWOOD FORESTRY SERVICES
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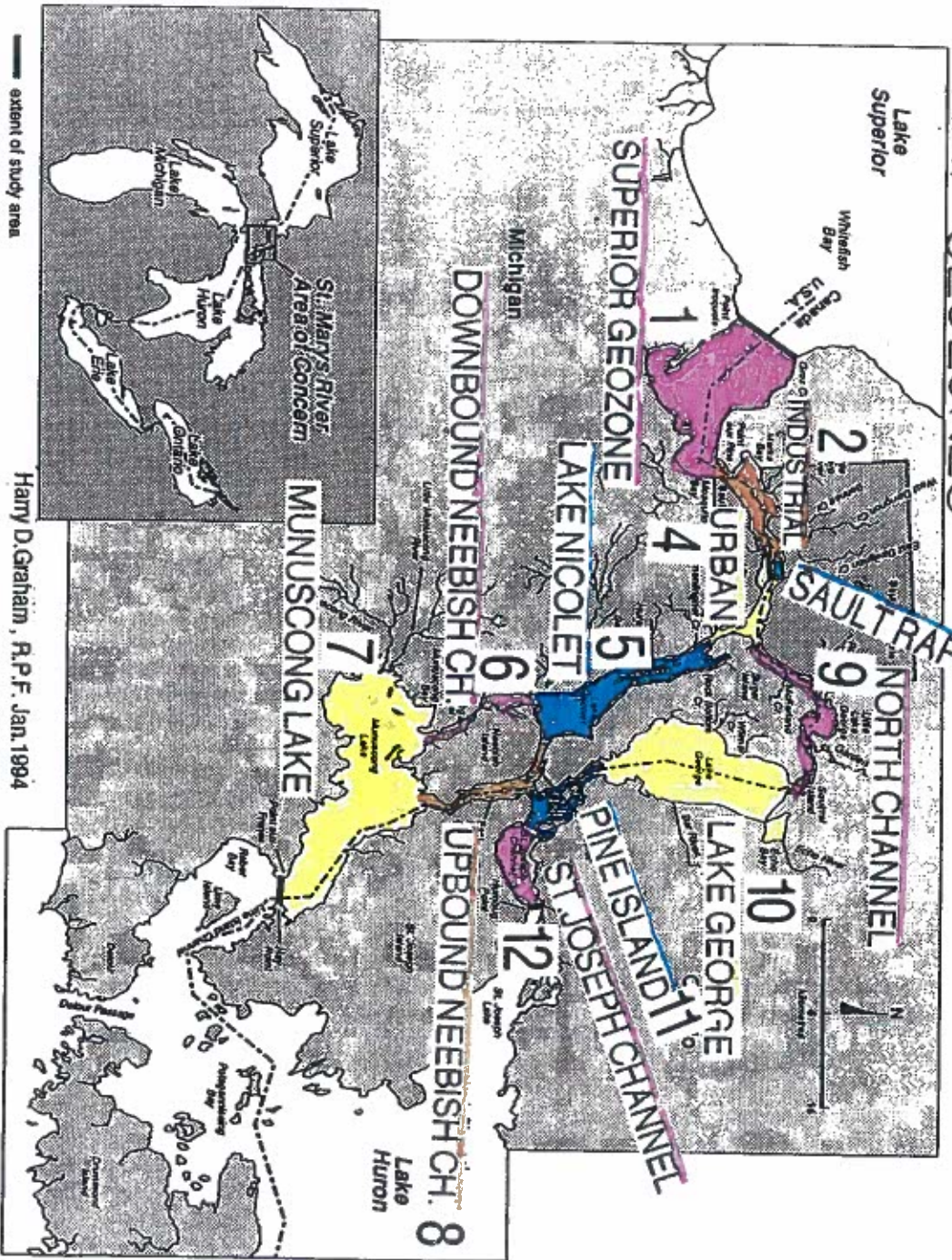
PROFESSIONAL WOODLAND
EVALUATION AND DEVELOPMENT
LAND USE PLANNING
AGRICULTURE AND ARBORICULTURE



Figure 5.1

St. Marys River Remedial Action Plan
Location map of the St. Marys River Area of Concern
(after USGS 1988)

RAP GEOZONES



3 Tier Zoning System - St. Marys River R.A.P.

Tier 1 GEOZONES - Geographical Units (Macrozones) -12

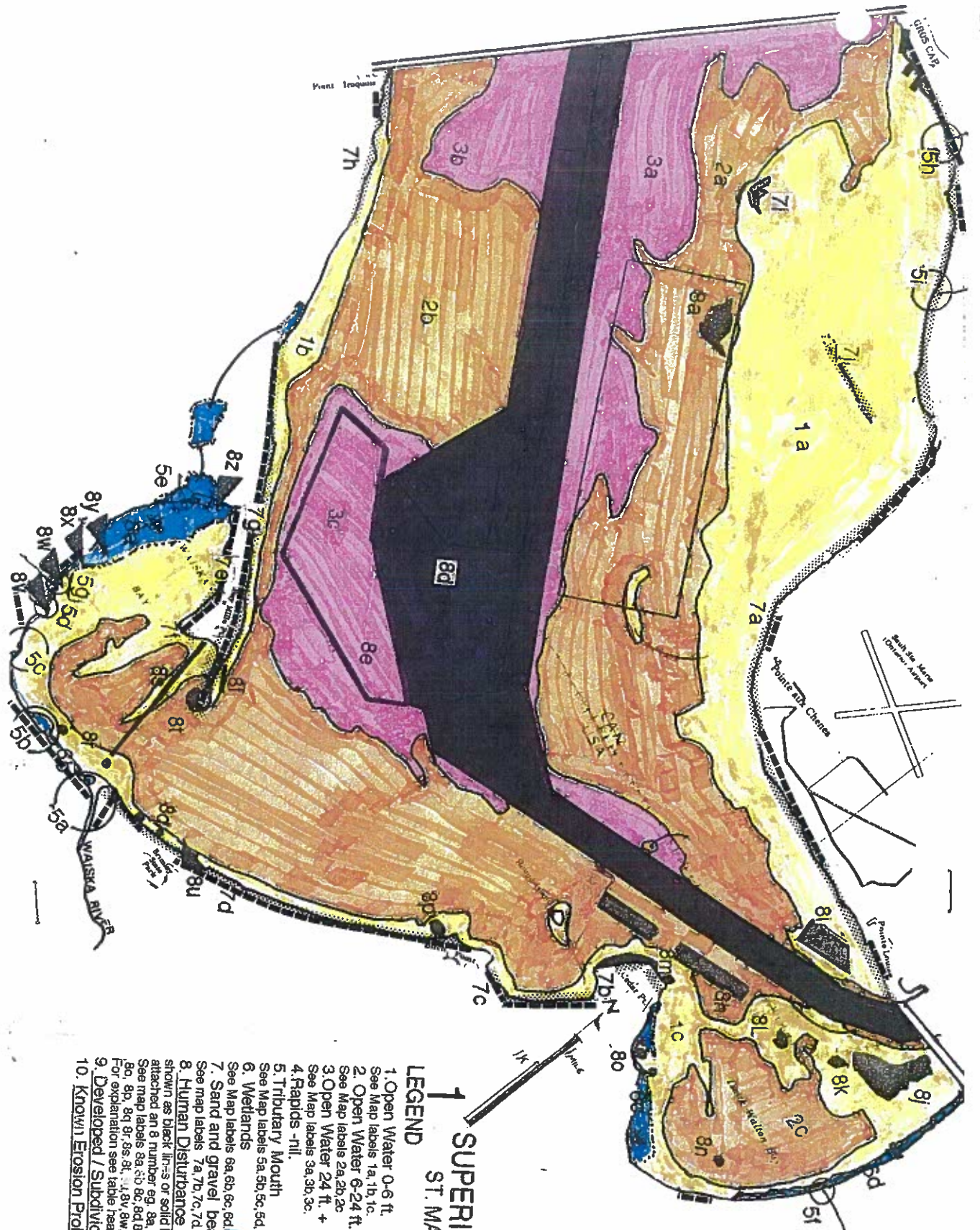
Tier 2 BIOZONES - Biophysical Units (Microzones)

BIOZONE (HABITAT) TYPES

1. Open Water: 0 - 6 FT. ...
2. Open Water: 6 - 24 FT. ...
3. Open Water: 24 + FT. ...
4. Rapids ...
5. Tributary Mouths ...
6. Wetland ...
7. Sand & Gravel Beaches ...
8. Human Disturbance ...

Tier 3 ADDENDA

1. Designated Environmental Zones
2. Critical Biological Features e.g. Migratory Route (MR)
3. First Nation Territories
4. Submerged & Emerged Vegetation



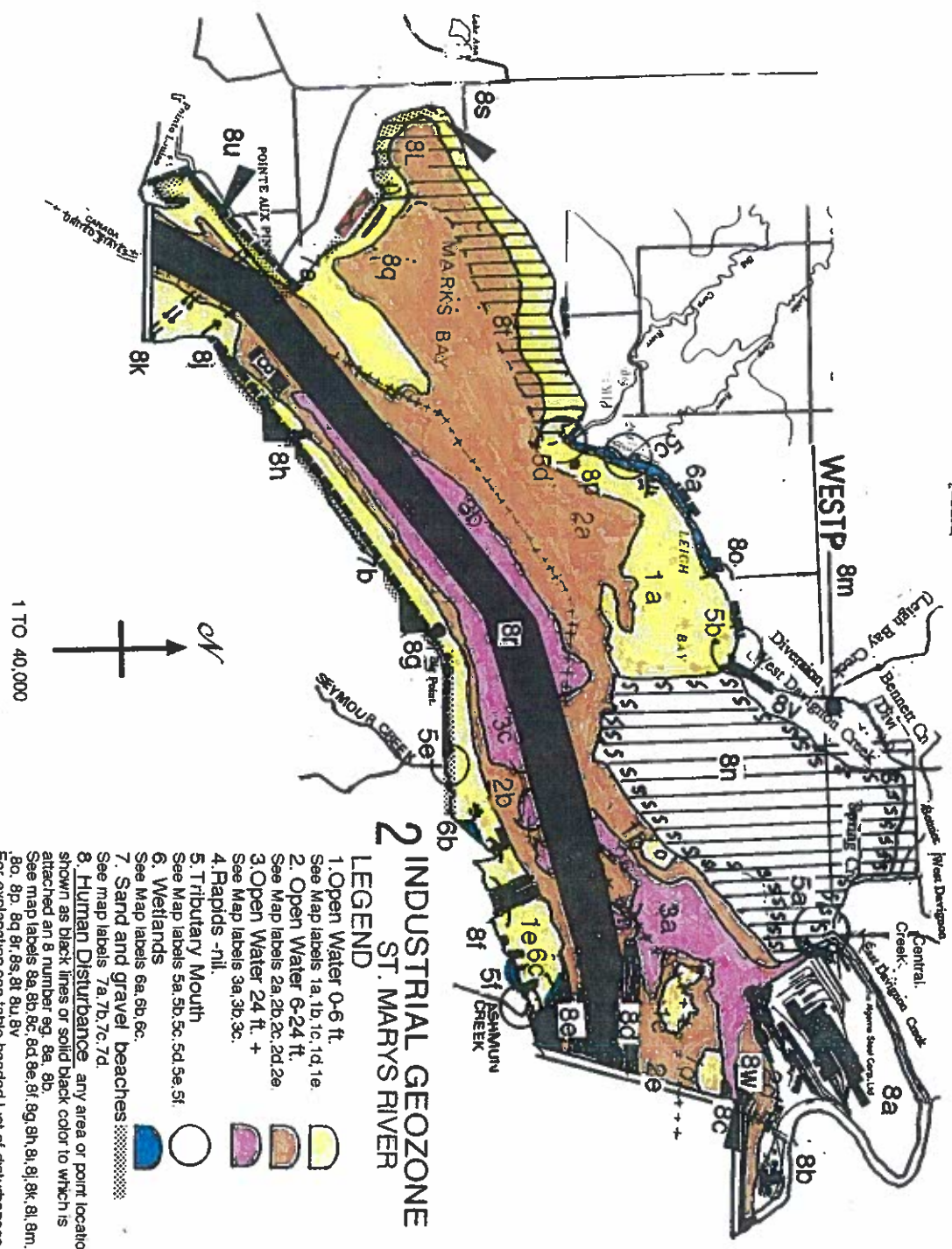
SUPERIOR GEOZONE ST. MARYS RIVER

LEGEND

1. Open Water 0-6 ft.
See Map labels 1a, 1b, 1c.
2. Open Water 6-24 ft.
See Map labels 2a, 2b, 2c.
3. Open Water 24 ft. +
See Map labels 3a, 3b, 3c.
4. Rapids -fill.
5. Tributary Mouth
See Map labels 5a, 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i.
6. Wetlands
See Map labels 6a, 6b, 6c, 6d.
7. Sand and gravel beaches
See Map labels 7a, 7b, 7c, 7d, 7e, 7f, 7g, 7h, 7i.
8. Human Disturbance any area or point location shown as black fill or solid black color to which is attached an 8 number eg. 8a, 8b.
See map labels 8a, 8b, 8c, 8d, 8e, 8f, 8g, 8h, 8i, 8j, 8k, 8l, 8m, 8n, 8o, 8p, 8q, 8r, 8s, 8t, 8u, 8v, 8w, 8x, 8y, 8z.
For explanation see table headed List of disturbance.
9. Developed / Subdivided Areas
10. Known Erosion Problems

Superior Geozone List of Disturbances

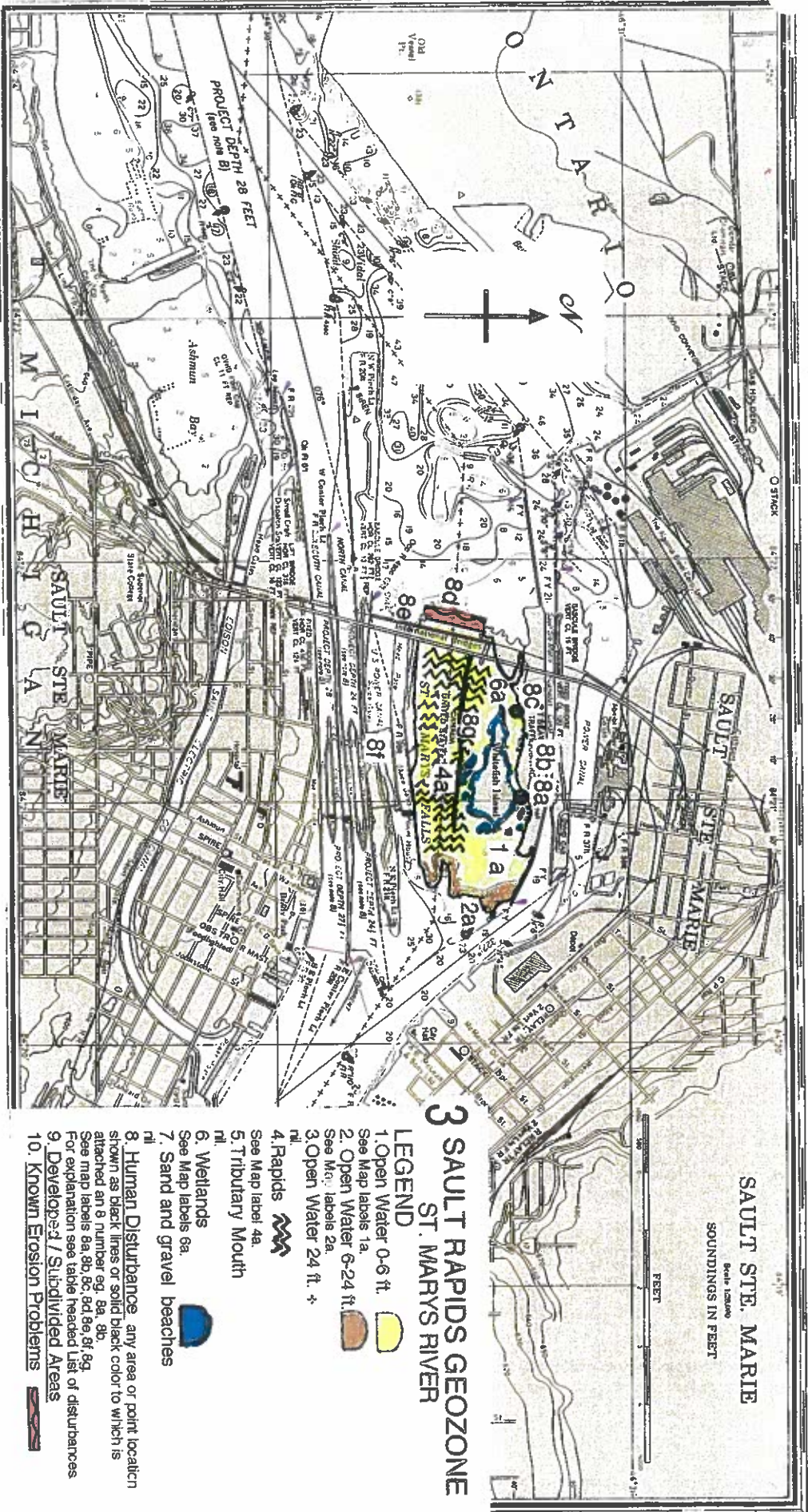
- 8a. McLean Dredging Licence Area -13,000 ft. long by 4800 ft. wide
Gravel extraction .
 - 8b . Shipping Channel Dredged to 30 ft. depth. Width 2400 ft.
 - 8c. " " " " " " Width 1350 ft.
 - 8d . " " Holding Area - place to anchor & wait out storms .
 - 8e . Shipping Channel Dredging Spoil Dump -active .
 - 8f Ruin. Similar to 8s
 - 8g. Spoil Dump 2400ft. long by 700 wide.
 - 8h " " " 3200" " " "
 - 8i " " " av2000" " " 1000 "
 - 8j " " " "irreguler shape approx. =8i+8g in size. Covered with trees.
 - 8k " " " " " = 1/8 of 8j.
 - 8L " " " " " = " " "
- Dredging Spoil Dumps . Oldest(8j) now covered with trees.
8m, 8n, 8o, 8p, 8q, 8r, - Ruins piling.
8s. Ruin .Suspect site of loading dock of giant 19th. century Bay Mills
sawmill
- 8t. " " " " giant Bay Mills Sawmill .
 - 8u, 8v, 8w, 8x, 8y, 8z. Boat Launching Ramps.



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Industrial Geozone List of Disturbances

- 8a - Algoma Steelworks
- 8b - St.Marys Paper and Great Lakes Power Plant
- 8c - Canadian Soo Ship Canal
- 8d - American Soo Ship Canal
- 8e - Edison Soo Power Canal
- 8f - Commercial Ruins
- 8g - City Water Intake and boat launch
- 8h - Piling and boat launch
- 8i - Dredge Spoil Dump 1600 ft. long by 500 wide.
- 8j - Trans Canada Pipeline
- 8k - " "
- 8l - OMNR Aircraft Launching Site
- 8m - West End Sewage Treatment Plant
- 8n - Slag Dump
- 8o - Abandoned Airbase,rock filled pier
- 8p - Crib ruin
- 8q - Ruins of many pilings
- 8r - Ship Channel dredged to 30 ft.depth & 1300 ft. width.
- 8s - Public Boat Launch
- 8t.- Former Pulpwood Booming Area - river bottom log cover
- 8u - Boat Launch
- 8v -Concrete Raceway on Leighs Bay Creek.
- 8w-Boat launch.

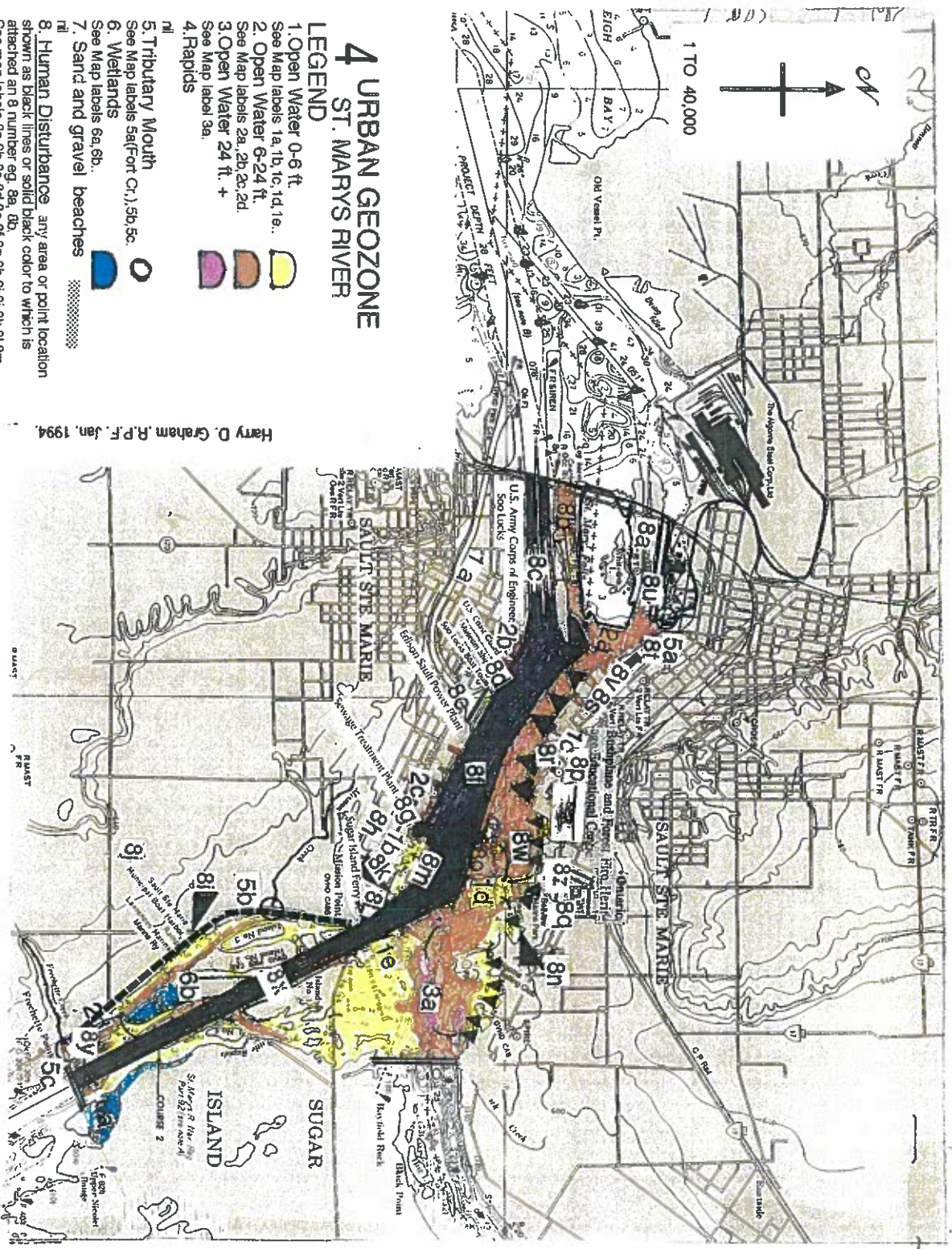


Sault Rapids Geozone List of Disturbances

- 8a Ruin of Ryan & Haney Power Plant.
- 8b N.Bdry formed by rubble waste from excavation of Canadian Locks.
- 8c Early 1900's excavation to extend 3 railways to Whitefish Island.
- 8d Compensating Dam
- 8e International Rlwy Bridge alongside International Highway Bridge.
- 8f US Corps of Engineers Power Canal & spoil -built Island forms South Bdry of Geozone.
- 8g Fisheries Remedial Berm.

4 URBAN GEOZONE ST. MARYS RIVER

- LEGEND**
- 1. Open Water 0-6 ft. See Map labels 1a, 1b, 1c, 1d, 1e.
 - 2. Open Water 6-24 ft. See Map labels 2a, 2b, 2c, 2d.
 - 3. Open Water 24 ft. + See Map label 3a.
 - 4. Rapids
 - 5. Tributary Mouth See Map labels 5a-f or cr., 5b, 5c.
 - 6. Wetlands See Map labels 6a, 6b.
 - 7. Sand and gravel beaches
 - 8. Human Disturbance any area or point location shown as black lines or solid black color to which is attached an 8 number eg. 8a, 8b. See map labels 8a, 8b, 8c, 8d, 8e, 8f, 8g, 8h, 8i, 8k, 8l, 8m, 8n, 8o, 8p, 8q, 8r, 8s, 8t, 8u, 8v, 8w. For explanation see table headed List of disturbances.
 - 9. Developed / Subdivided Areas
 - 10. Known Erosion Problems






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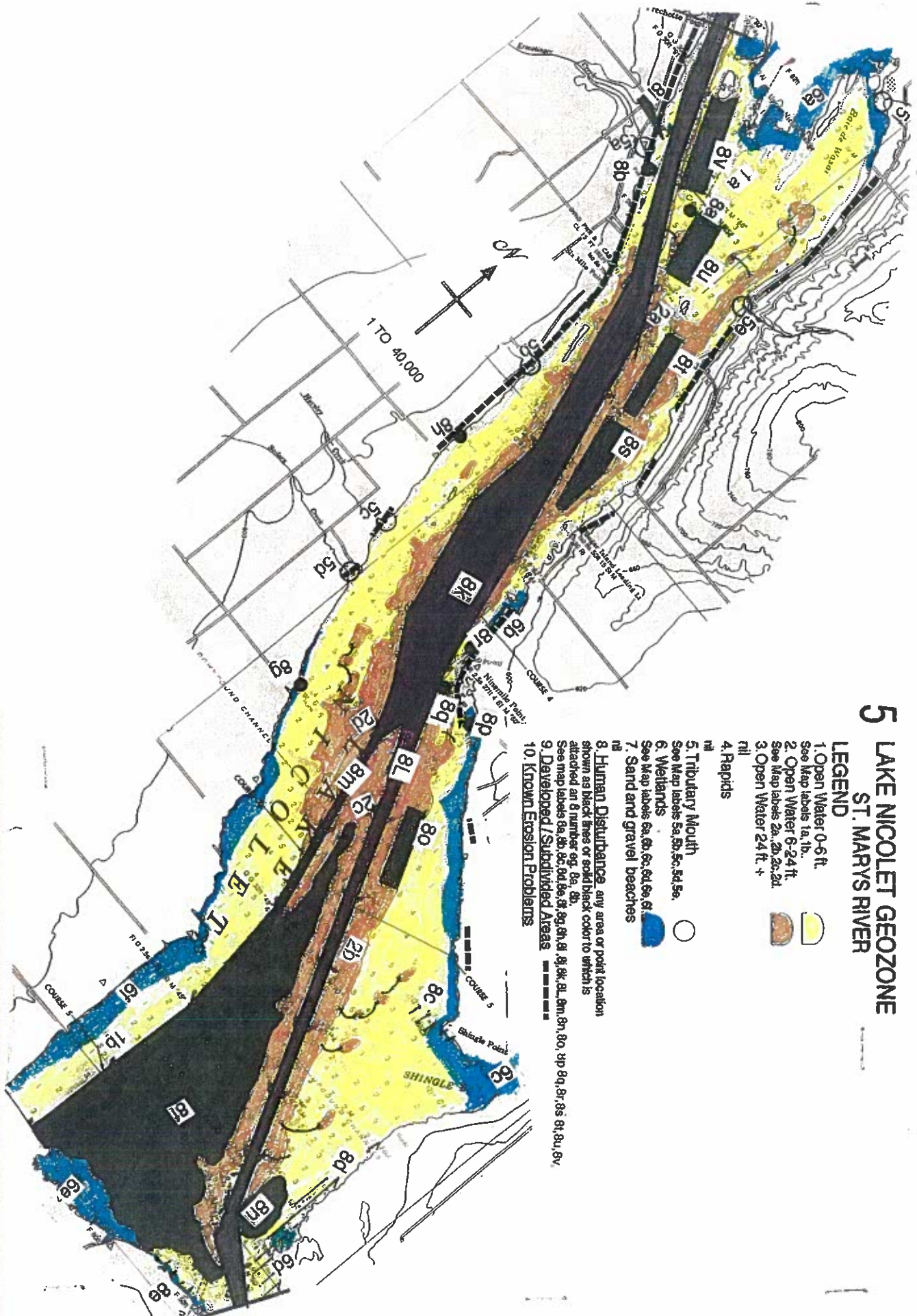
List of Disturbances - URBAN GEOZONE

- 8a -Canadian Heritage Ship Canal
- 8b -US Corps of Engineers Power Canal
- 8c - " " " Ship Canals.
- 8d -US Coast Guard Station .Soo Locks Boat Tours Dock.Museum Ship.
- 8e -Edison Sault Power Plant.
- 8f -Ship Channel dredged to 28 ft. deep and av. width of 1500 ft.
- 8g -Soo Mich. Sewage Treatment Plant .
- 8h -Three ship ruins.
- 8i -Boat launch.
- 8j -Marina.Boat Harbour.Marine Flwy.
- 8k -Boat launch.
- 8L -Sugar Island Ferry Dock.
- 8m -Wintertime Ice Booms anchored to " ice islands".
- 8n -Boat launch.
- 8o - Boulder-filled (C.O.E. made) miniature island supporting Navigation aids.
Known as Bayfield Rock.
- 8p -Concrete ramp 400 ft of waterline in front of Bush Plane Museum. Heliport.
- 8q - Belleview Marina.
- 8r -Government dock
- 8s -Bondar Park Marina
- 8t -City Fish Hatchery.
- 8u -Sea Lamprey Control Centre.
- 8v -Waterfront Boardwalk with Fishing Platforms.
- 8w -Storm Sewer Outfalls.
- 8x -Ship Channel 27 ft. deep and 700 ft. wide.
- 8y -Ship ruins.
- 8z -St. Marys River Boat Club(now Rotary YMCA Tennis & Aquatic Club)

5 LAKE NICOLET GEOZONE ST. MARYS RIVER

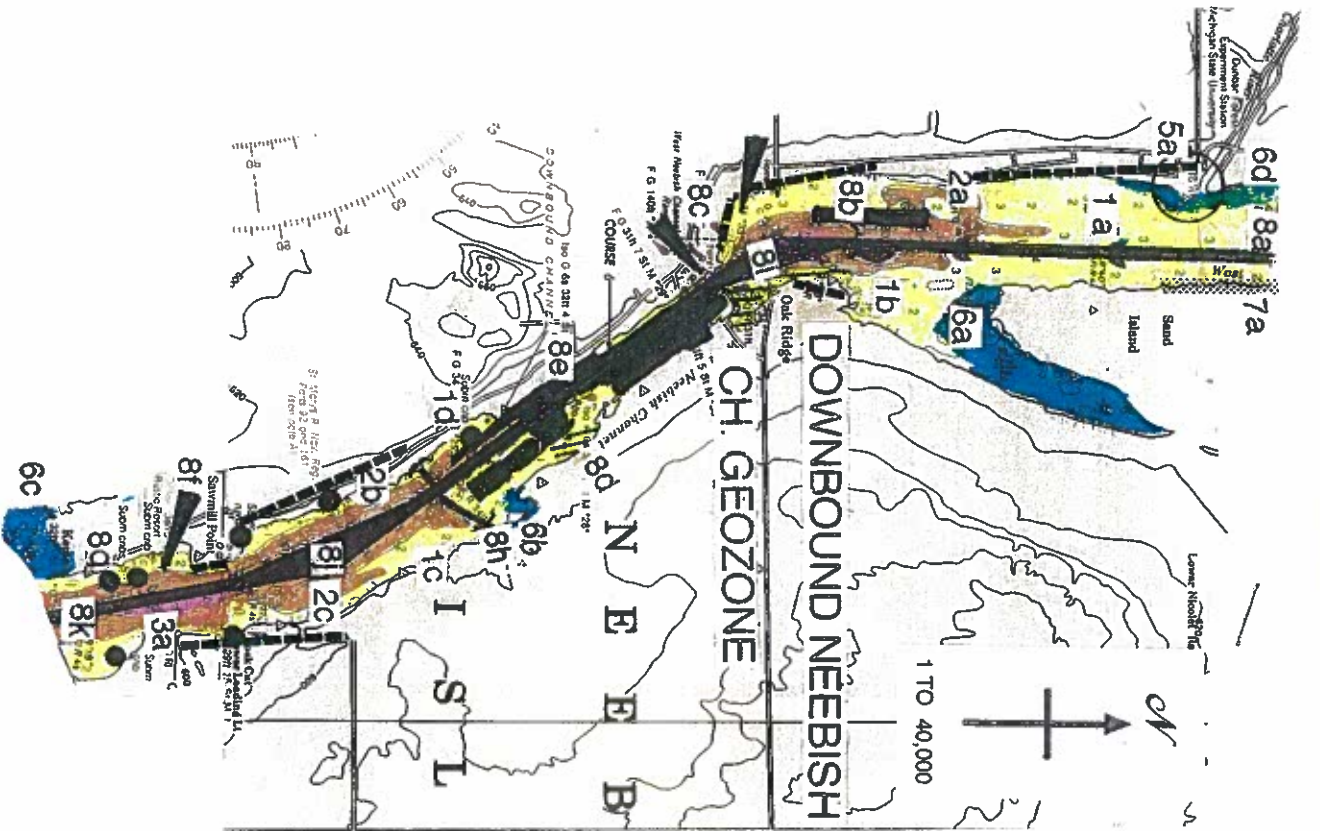
LEGEND

- 1. Open Water 0-6 ft. 
- See Map labels 1a, 1b.
- 2. Open Water 6-24 ft. 
- See Map labels 2a, 2b, 2c, 2d.
- 3. Open Water 24 ft. + 
- 4. Rapids 
- 5. Tributary Mouth 
- See Map labels 5a, 5b, 5c, 5d, 5e.
- 6. Wetlands 
- See Map labels 6a, 6b, 6c, 6d, 6e, 6f.
- 7. Sand and gravel beaches 
- 8. Human Disturbance, any area or point location shown as black lines or solid black color to which is attached an 8 number eg. 8a, 8b. 
- See map labels 8a, 8b, 8c, 8d, 8e, 8f, 8g, 8h, 8i, 8j, 8k, 8l, 8m, 8n, 8o, 8p, 8q, 8r, 8s, 8t, 8u, 8v.
- 9. Developed / Subdivided Areas 
- 10. Known Erosion Problems 



List of Disturbances LAKE NICOLET GEOZONE.

- 8a -Crib .
- 8b -Pile
- 8c -Foul Area.
- 8d - " "
- 8e - " "
- 8f -Massive deposite of dredged material;boundaries undefined.
- 8g -Ruins.
- 8h - "
- 8i -Boat launch.
- 8j -Ship Channel 27 ft. deep and av. width 600 ft.
- 8k - " 29 " " with separate upbound & downbound channels . The bulge is an anchorage arrea 28 ft. deep . Combined width of dredged area at this poin av. 2600 ft
- 8L Upbound Ship Channel 27 ft. deep & 600 ft. wide.
- 8m - Downbound " " 27 1/2 " "width ranges from 400 to 800 ft..
- 8n -Irreguler deposite of dredged spoil with undefined boundary.
- 8o -Rectangler " " "Length 3300 ft. Width 800 ft.
- 8p - Ship Wreck
- 8q -Pile.
- 8r -Crib ruins.
- 8s -Rectangler deposite of dredged spoil material. Length 3000 ft. av. Width 1000 ft.
- 8t - " " " " " " 3600 " " 800 "
- 8u - " " " " " " 2600 " " 1000 "
- 8v - " " " " " " 4000 " " 1000 "



6 DOWNBOUND NEEBISH CHANNEL GEOZONE

ST. MARYS RIVER

LEGEND

1. Open Water 0-6 ft. See Map labels 1a, 1b, 1c, 1d.
2. Open Water 6-24 ft. See Map labels 2a, 2b, 2c.
3. Open Water 24 ft. + See Map label 3a.
4. Rapids
5. Tributary Mouth See Map labels 5a.
6. Wetlands See Map labels 6a, 6b, 6c, 6d.
7. Sand and gravel beaches See Map labels 7a.
8. Human Disturbance any area or point location shown as black lines or solid black color to which is attached an 8 number eg. 8a, 8b. See map labels 8a, 8b, 8c, 8d, 8e, 8f, 8g, 8h, 8i, 8j, 8k.
9. Developed / Subdivided Areas
10. Known Erosion Problems.





Downbound Neebish Ch. Geozone . List of Disturbances.

- 8a Shipping Channel dredged to a minimum depth of 27 ft. Width 400 ft.
- 8b Dredged Spoil Dump 3000 ft. long & 500 ft. wide.
- 8c Ferry Dock, 2 Boat Launches.
- 8d Cluster of 3 cross-hatched embayments marked "FOUL".
- 8e This middle third of the channel is flanked by extensive C.O.E. - made islands and shoreline built of dredged spoil. There is also a submerged crib in this area . Disturbance extends for a distance of 9000 ft.
- 8f Tourist Resort, Boat Launch and submerged ruins (suspect sawmill remains).
- 8g Cluster of 4 submerged cribs and 2 cribs in lower third of channel.
- 8h -Remains of C.O.E. Coffe Dam 2400 ft. long.
- 8i -Ship Channel 800 ft. wide at corner.
- 8j - " " " " " "
- 8k -Ship Channel width 400 ft. Depth 28 ft.

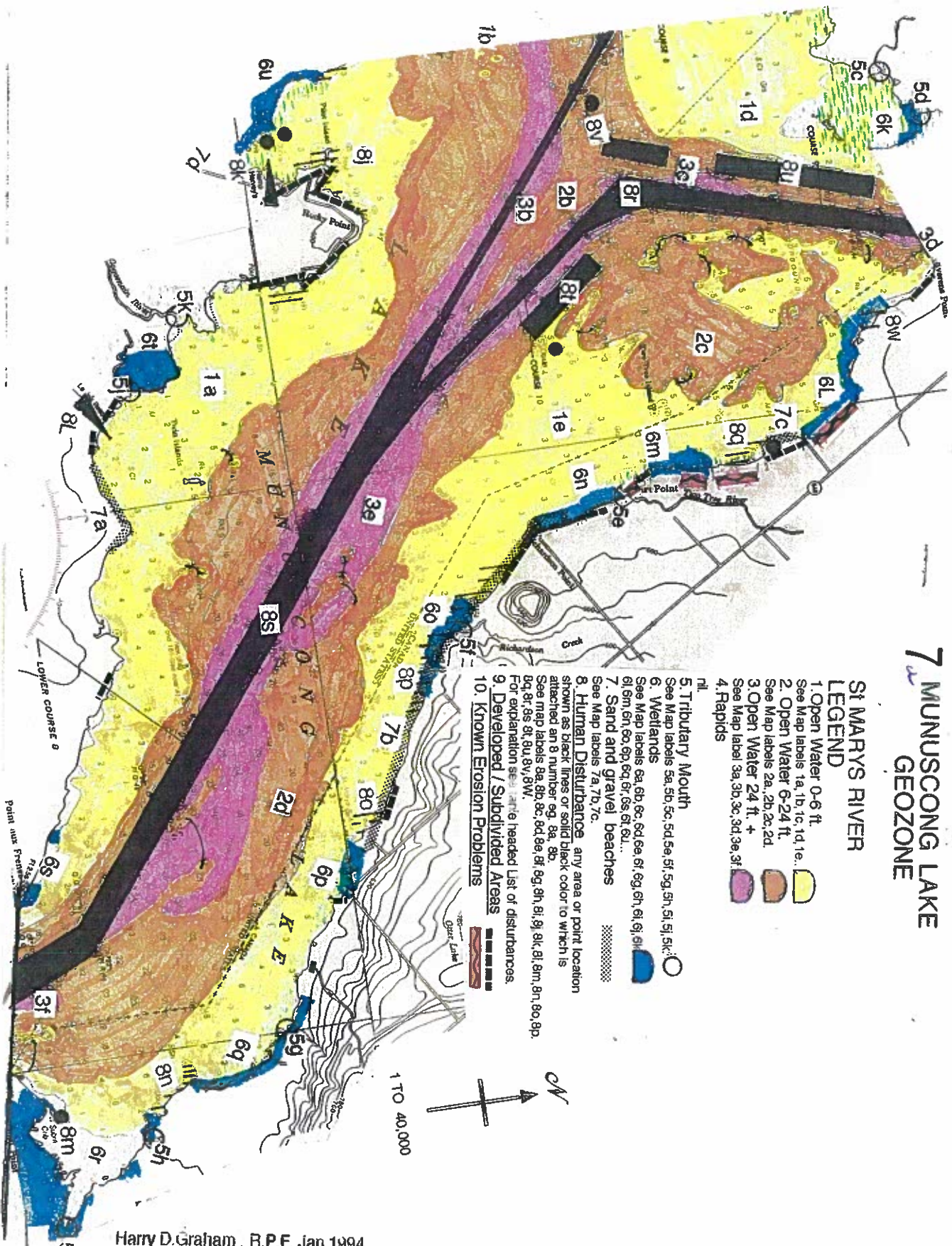
7 MUNUSCONG LAKE GEOZONE

ST MARYS RIVER

LEGEND

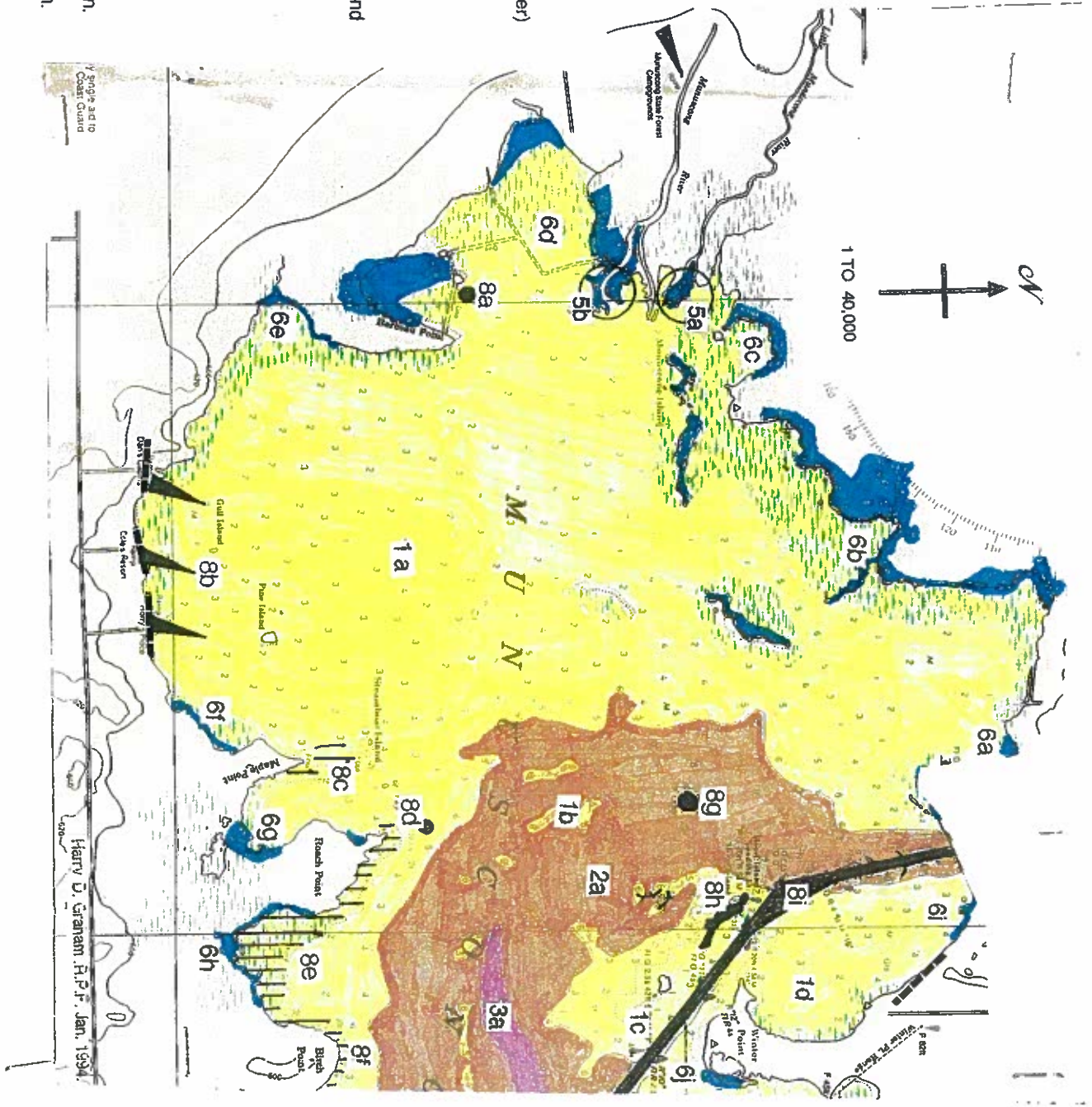
- 1. Open Water 0-6 ft. 
- See Map labels 1a, 1b, 1c, 1d, 1e.
- 2. Open Water 6-24 ft. 
- See Map labels 2a, 2b, 2c, 2d.
- 3. Open Water 24 ft. + 
- See Map label 3a, 3b, 3c, 3d, 3e, 3f.
- 4. Rapids 

- 5. Tributary Mouth  See Map labels 5a, 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i, 5j, 5k.
- 6. Wetlands  See Map labels 6a, 6b, 6c, 6d, 6e, 6f, 6g, 6h, 6i, 6j, 6k, 6l, 6m, 6n, 6o, 6p, 6q, 6r, 6s, 6t, 6u, 6v, 6w, 6x, 6y, 6z.
- 7. Sand and gravel beaches  See Map labels 7a, 7b, 7c.
- 8. Human Disturbance, any area or point location shown as black lines or solid black color to which is attached an 8 number eg. 8a, 8b. See map labels 8a, 8b, 8c, 8d, 8e, 8f, 8g, 8h, 8i, 8j, 8k, 8l, 8m, 8n, 8o, 8p, 8q, 8r, 8s, 8t, 8u, 8v, 8w.
- 9. Developed / Subdivided Areas. For explanation see table headed List of disturbances.
- 10. Known Erosion Problems 



List of Disturbances MUNUSCONG LAKE GEOZONE

- 8a - Set of three dykes (Barbeau Pt. to Munuscong River)
- 8b - Group of 3 resorts each with boat launching ramp.
- 8c - Foul area - Maple Pt.
- 8d - " - Roach Pt. with stumps.
- 8e - " - in bay between 8f & 8d.
- 8f - " - Birch Point.
- 8g - Obstruction in Open Water area 2a.
- 8h - Spoil Dump (Moon Island)
- 8i - Ship Channel 300 ft. wide (Max. 1000 ft. at corner) and 27 1/2 to 29 1/2 deep.
- 8j - Foul Area Rocky Point.
- 8k - 2 cribs, a resort and a boat launching ramp.
- 8L - B.L. Ramp
- 8m - Crib.
- 8n - Foul Area.
- 8o - " "
- 8p - " "
- 8q - " and Ruins.
- 8r - Ship Channel range in width 600-1000 ft.; 1500 ft. on corner. Depth 21-27 ft.
- 8s - Ship Channel. Width 1000 ft. Depth 28 ft.
- 8t - Spoil Dump 4000 ft. long by 1000 ft. wide. Obstruction.
- 8u - " " 6000 " " 800 " " Obstruction.
- 8v - " " 2600 " " 800 " " Obstruction.
- 8w - Foul Area.





8 UPBOUND NEEBISH CHANNEL GEOZONE ST. MARYS RIVER

LEGEND

- 1. Open Water 0-6 ft. See Map labels 1a, 1b, 1c.
- 2. Open Water 6-24 ft. See Map labels 2a, 2b, 2c, 2d.
- 3. Open Water 24 ft. + See Map label 3a.
- 4. Rapids
- 5. Tributary Mouth See Map labels 5a, 5b.
- 6. Wetlands See Map labels 6a, 6b, 6c, 6d, 6e, 6f, 6g, 6h.
- 7. Sand and gravel beaches See Map labels 7a, 7b, 7c, 7d, 7e.
- 8. Human Disturbance any area or point location shown as black lines or solid black color to which is attached an 8 number eg. 8a, 8b. See map labels 8a, 8b, 8c, 8d, 8e, 8f, 8g, 8h, 8i, 8j, 8k, 8l, 8m, 8n, 8o, 8p, 8q, 8r, 8s, 8t, 8u, 8v, 8w, 8x, 8y, 8z. For explanation see table headed List of Disturbances.
- 9. Developed / Subdivided Areas
- 10. Known Erosion Problems

Harry D. Graham, R.P.F. Jan. 1994

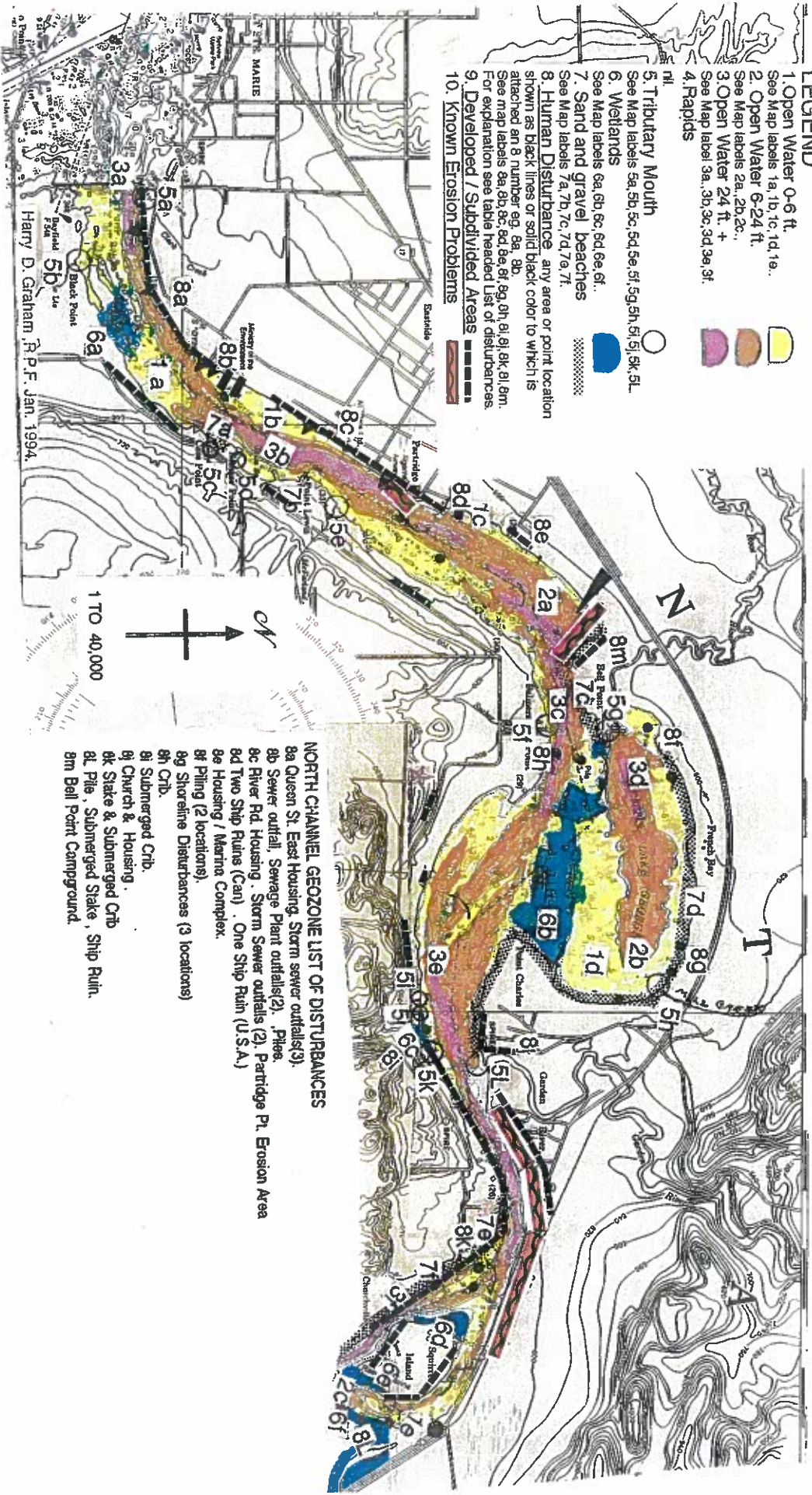
List of Disturbances .UPBOUND NEEBISH CHANNEL GEOZONE

- 8a - Crib.
- 8b -C.O.E.-made island built from dredged spoil.
- 8c - Spoil Dump3700 ft. long by 800 ft. wide.
- 8d - " " 4100 " " 800 " "
- 8e - " " undefined boundaries.
- 8f - " "2800 ft. long by 600 ft. wide.
- 8g - Boat Launching Ramp.
- 8h - Obstruction.
- 8i - Ruin.
- 8j -C.O.E.-built island from spoil.
- 8k - " - " Breakwater built from rock spoil -6100 ft. long.
- 8l - Ship Channel 500 ft. wide (1500 ft. on Corner),28 ft. Deep.
- 8m - " " 500 " " 27 ft. "
- 8n - " " 1200 " " 28 ft. "
- 8o - " " 500 " " "
- 8 p -Obstruction.

9 NORTH CHANNEL GEOZONE ST. MARYS RIVER

LEGEND

- 1. Open Water 0-6 ft. See Map labels 1a, 1b, 1c, 1d, 1e.
- 2. Open Water 6-24 ft. See Map labels 2a, 2b, 2c.
- 3. Open Water 24 ft. + See Map label 3a, 3b, 3c, 3d, 3e, 3f.
- 4. Rapids
- 5. Tributary Mouth See Map labels 5a, 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i, 5k, 5L.
- 6. Wetlands See Map labels 6a, 6b, 6c, 6d, 6e, 6f.
- 7. Sand and gravel beaches See Map labels 7a, 7b, 7c, 7d, 7e, 7f.
- 8. Human Disturbance: any area or point location shown as black lines or solid black color to which is attached an 8 number eg. 8a, 8b. See map labels 8a, 8b, 8c, 8d, 8e, 8f, 8g, 8h, 8i, 8j, 8k, 8l, 8m. For explanation see table headed List of Disturbances.
- 9. Developed / Subdivided Areas
- 10. Known Erosion Problems



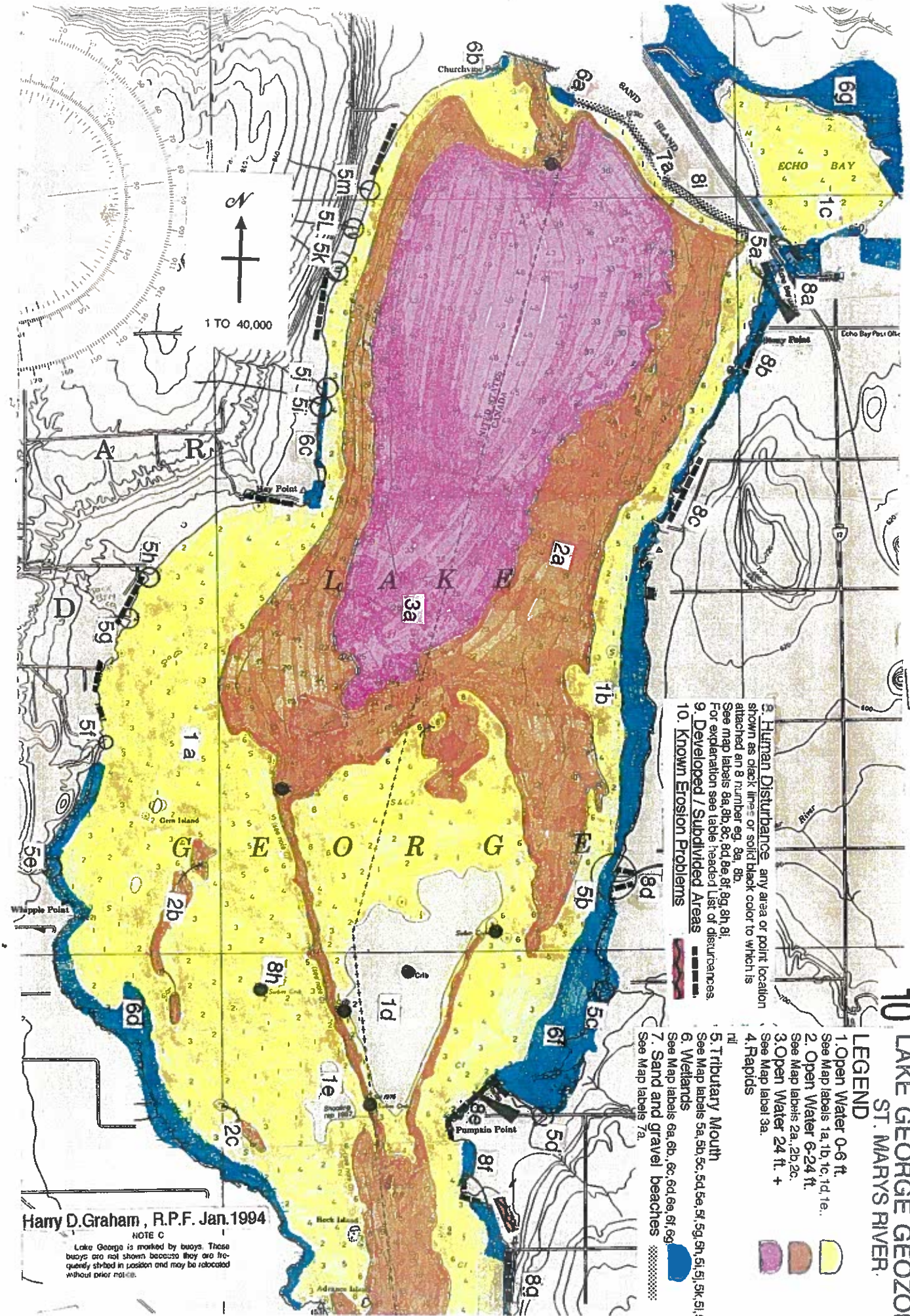
NORTH CHANNEL GEOZONE LIST OF DISTURBANCES

- 8a Queen St. East Housing, Storm sewer outfalls(3).
- 8b Sewer outfall, Sewerage Plant outfalls(2), Piles.
- 8c River Rd. Housing, Storm Sewer outfalls (2), Partridge Pt. Erosion Area
- 8d Two Ship Ruins (Can), One Ship Ruin (U.S.A.)
- 8e Housing / Marina Complex.
- 8f Piling (2 locations).
- 8g Shoreline Disturbances (3 locations)
- 8h Crib.
- 8i Submerged Crib.
- 8j Church & Housing.
- 8k Stake & Submerged Crib
- 8l Pile, Submerged Stake, Ship Ruin.
- 8m Bell Point Campground.

10 LAKE GEORGE GEOZOI ST. MARYS RIVER.

LEGEND

- 1. Open Water 0-6 ft. See Map labels 1a, 1d, 1c, 1d, 1e.
- 2. Open Water 6-24 ft. See Map labels 2a, 2b, 2c.
- 3. Open Water 24 ft. + See Map label 3a.
- 4. Rapids
- 5. Tributary Mouth See Map labels 5a, 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i, 5k, 5l.
- 6. Wetlands See Map labels 6a, 6b, 6c, 6d, 6e, 6f, 6g.
- 7. Sand and gravel beaches See Map labels 7a.
- 8. Human Disturbance any area or point location shown as check lines or solid black color to which is attached an 8 number eg. 8a, 8b. See map labels 8a, 8b, 8c, 8d, 8e, 8f, 8g, 8h, 8i. For explanation see table headed List of disturbances.
- 9. Developed / Subdivided Areas
- 10. Known Erosion Problems



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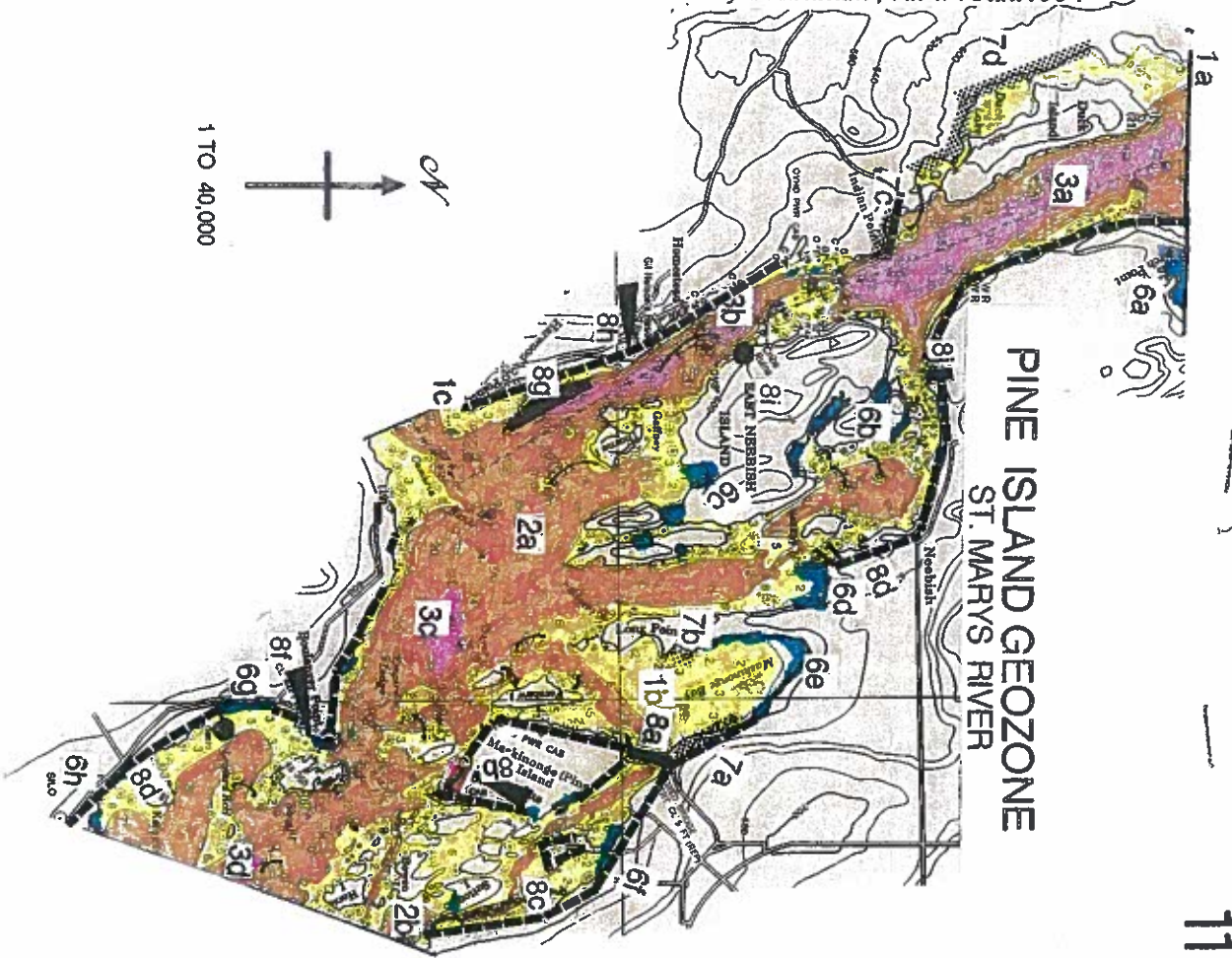
NOTE C

Lake George is visited by buoys. These buoys are not shown because they are frequently shifted in position and may be relocated without prior notice.

LAKE GEORGE GEOZONE LIST OF DISTURBANCES

- 8a Marina , Boat Launch , Fixed Bridges(2), Housing (2 locations)
- 8b Stony Pt. Housing.
- 8c Lake George Housing (2 locations)
- 8d Mouth of Bar River.
- 8e Pumpkin Pt. Housing , Boat Launch.
- 8f " " " (small additional)
- 8g " " " (large ")
- 8h Seven submerged Cribs(scattered locations along old navigation channel)
- 8i Ojibway Campground..

Harry D. Graham, R.P.F. Jan. 1994



PINE ISLAND GEOZONE ST. MARYS RIVER

11 PINE ISLAND GEOZONE ST. MARYS RIVER

LEGEND

- 1. Open Water 0-6 ft.
See Map labels 1a, 1b, 1c.
- 2. Open Water 6-24 ft.
See Map labels 2a, 2b, ...
- 3. Open Water 24 ft. +
See Map label 3a, 3b, 3c, 3d.
- 4. Rapids
- 5. Tributary Mouth
- 6. Wetlands
See Map labels 6a, 6b, 6c, 6d, 6e, 6f, 6g, 6h
- 7. Sand and gravel beaches
See Map labels 7a, 7b, 7c, 7d.
- 8. Human Disturbance any area or point locatic shown as black lines or solid black color to which is attached an 8 number eg. 8a, 8b
For explanation see table headed List of disturbances.
- 9. Developed / Subdivided Areas
- 10. Known Erosion Problems



- List of Disturbances - PINE ISLAND GEOZONE.
- 8a -Rock -filled auto causeway with fixed bridge over water channel.
 - 8b -Boat launch and known erosion problem.
 - 8c -Submarine cable .
 - 8d -Marina.
 - 8e -Obstruction.
 - 8f -Boat launch.
 - 8g -Dredged spoil dump 2400 ft. long and 400 ft. av . width.
 - 8h -Boat launch.
 - 8i -Cribs and ruins of an abandoned mining operation.
 - 8j -Docks and intensive cottage development.

12 ST. JOSEPH CHANNEL GEOZONE ST. MARYS RIVER

LEGEND

1. Open Water 0-6 ft.

See Map labels 1a,...

2. Open Water 6-24 ft.

See Map labels 2a,...

3. Open Water 24 ft. +

See Map label 3a,3b..

4. Rapids

nil

5. Tributary Mouth

See Map labels 5a.

6. Wetlands

See Map labels 6a,6b,6c,6d.

7. Sand and gravel beaches

nil

8. Human Disturbance any area or point location shown as black lines or solid black color to which is attached an 8 number eg. 8a, 8b.

See map labels 8a,8b,8c.

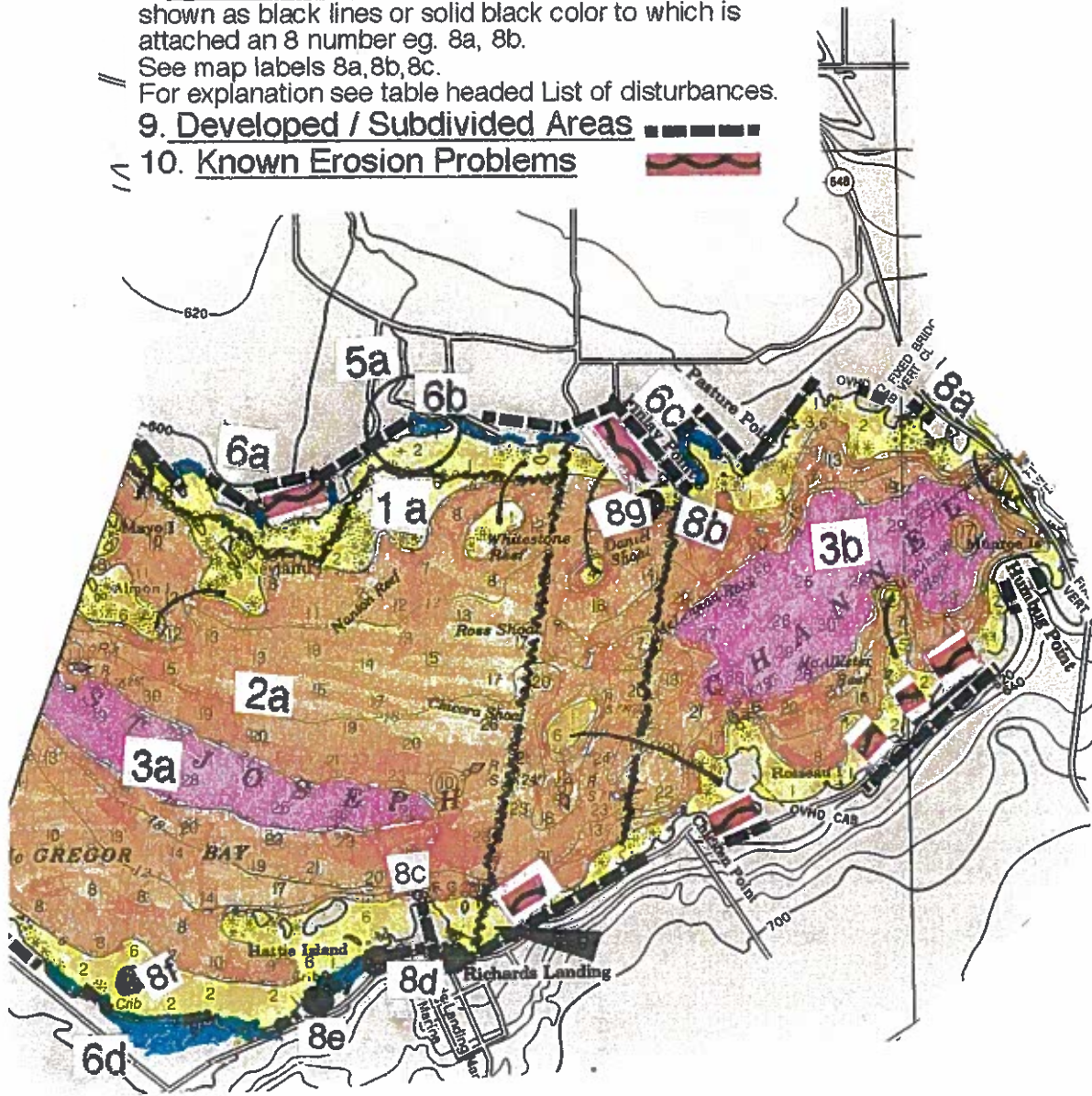
For explanation see table headed List of disturbances.

9. Developed / Subdivided Areas 

10. Known Erosion Problems 



1 TO 40,000



- List of Disturbances - ST. JOSEPH CH. GEOZONE
- 8a -Overhead Concrete Highway Bridge.
 - 8b -Submarine Cables.
 - 8c -Marina.
 - 8d -Ship ruins.(2)
 - 8e -Crib.
 - 8f - "
 - 8g -Ship ruin.