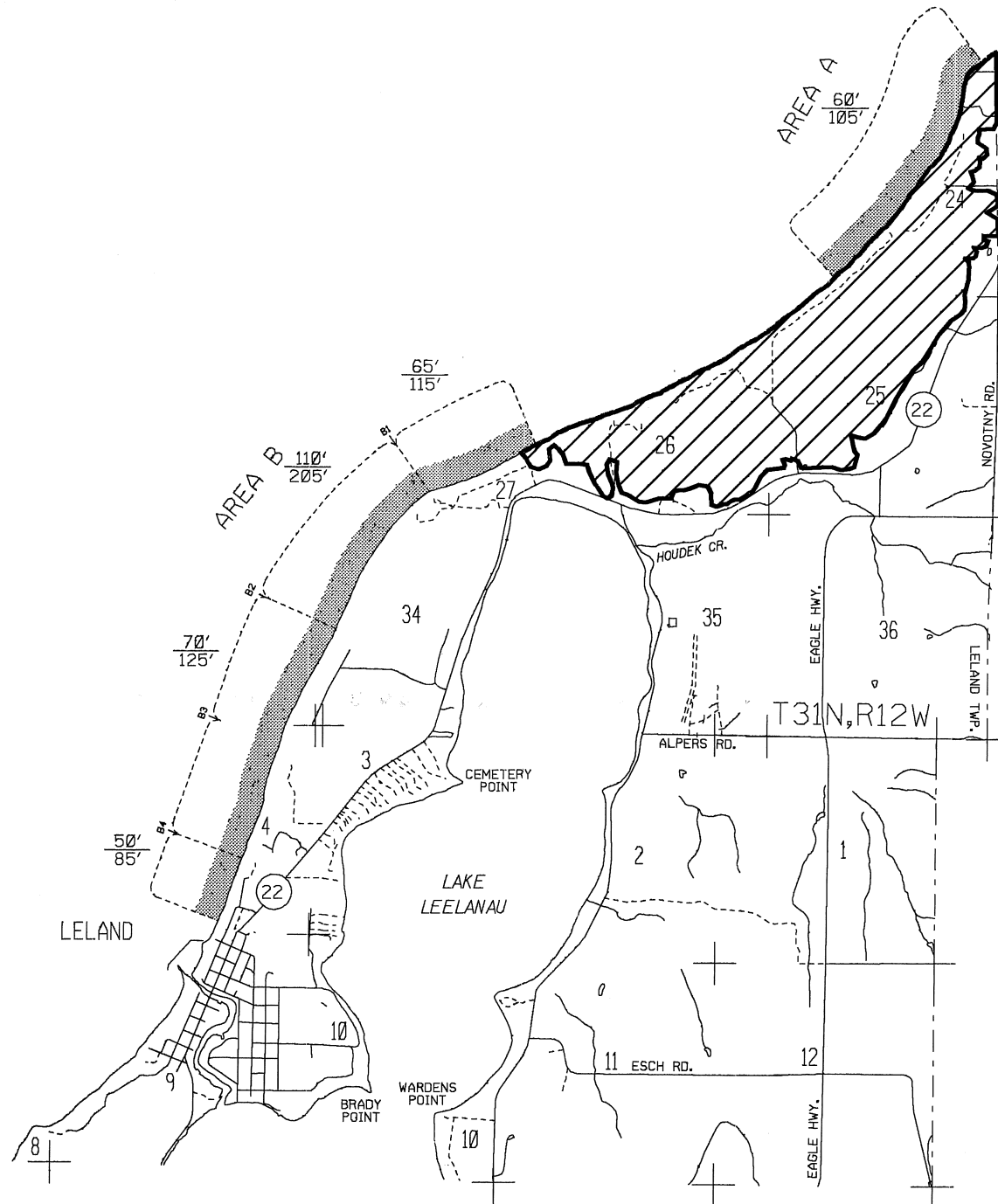
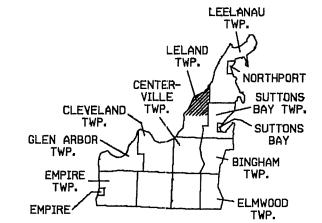


# LELAND TOWNSHIP NORTH

## HIGH RISK EROSION AREAS & CRITICAL DUNE AREAS

LEELANAU COUNTY

T31N,R12W



### HIGH RISK EROSION AREAS

THE NUMBER REPRESENTS, IN FEET, THE 30 YEAR PROJECTED RECESSION DISTANCE.  
 60' THE NUMBER REPRESENTS, IN FEET, THE 60 YEAR PROJECTED RECESSION DISTANCE.

HIGH RISK EROSION AREA  
 (shading alongshore)

THESE AREAS ARE LEGALLY DEFINED BY THE SHORELANDS PROTECTION AND MANAGEMENT ACT, 1978 P.A. 245, AS AMENDED, AS BEING GREAT LAKES SHORELAND AREAS DOCUMENTED TO REcede AN AVERAGE OF ONE FOOT OR MORE PER YEAR.

### CRITICAL DUNE AREAS

BARRIER DUNES  
 BARRIER DUNE FORMATIONS DESIGNATED PURSUANT TO 1976 P.A. 222

AREAS NOT INCLUDED IN DESIGNATED BARRIER DUNE FORMATIONS THAT ARE COMPOSED PRIMARILY OF DUNE SAND AND EXHIBIT SEVERAL DUNE-LIKE CHARACTERISTICS.

EXEMPLARY DUNE ASSOCIATED PLANT COMMUNITIES OUTSIDE DESIGNATED DUNE FORMATIONS. MICHIGAN NATURAL FEATURES INVENTORY REFERENCE CODE INDICATED.

### SOURCE

STATE OF MICHIGAN ACT 245 RECESSION RATE MAPS & ATLAS OF CRITICAL DUNE AREAS

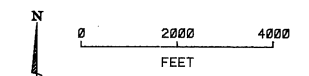
### INFORMATION

MICHIGAN DEPARTMENT OF NATURAL RESOURCES  
 LAND AND WATER MANAGEMENT DIVISION  
 P.O. BOX 30028  
 LANSING, MI 48909  
 (517) 373-1958

**GIS**

GREAT LAKES INFORMATION SYSTEM  
 MICHIGAN DEPARTMENT OF NATURAL RESOURCES  
 LAND AND WATER MANAGEMENT DIVISION

02-10-93

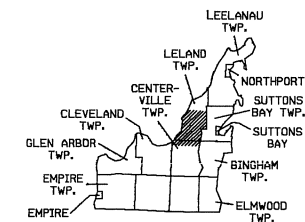


# LELAND TOWNSHIP SOUTH

## HIGH RISK EROSION AREAS & CRITICAL DUNE AREAS

LEELANAU COUNTY

T30N,R12W



### HIGH RISK EROSION AREAS

THE NUMBER REPRESENTS, IN FEET, THE  
60' 30 YEAR PROJECTED RECESSION DISTANCE.  
105' THE NUMBER REPRESENTS, IN FEET, THE  
60 YEAR PROJECTED RECESSION DISTANCE.

HIGH RISK EROSION AREA  
(shading alongshore)

THESE AREAS ARE LEGALLY DEFINED BY THE  
SHORELANDS PROTECTION AND MANAGEMENT ACT,  
1970 P.A. 245, AS AMENDED, AS BEING GREAT  
LAKES SHORELAND AREAS DOCUMENTED TO RECEDE  
AN AVERAGE OF ONE FOOT OR MORE PER YEAR.

### CRITICAL DUNE AREAS

BARRIER DUNES  
BARRIER DUNE FORMATIONS DESIGNATED  
PURSUANT TO 1976 P.A. 222

AREAS NOT INCLUDED IN DESIGNATED  
BARRIER DUNE FORMATIONS THAT ARE  
COMPOSED PRIMARILY OF DUNE SAND  
AND EXHIBIT SEVERAL DUNE-LIKE  
CHARACTERISTICS.

EXEMPLARY DUNE ASSOCIATED PLANT  
COMMUNITIES OUTSIDE DESIGNATED  
DUNE FORMATIONS. MICHIGAN NATURAL  
FEATURES INVENTORY REFERENCE CODE  
INDICATED.

### SOURCE

STATE OF MICHIGAN ACT 245 RECESSION  
RATE MAPS & ATLAS OF CRITICAL DUNE AREAS

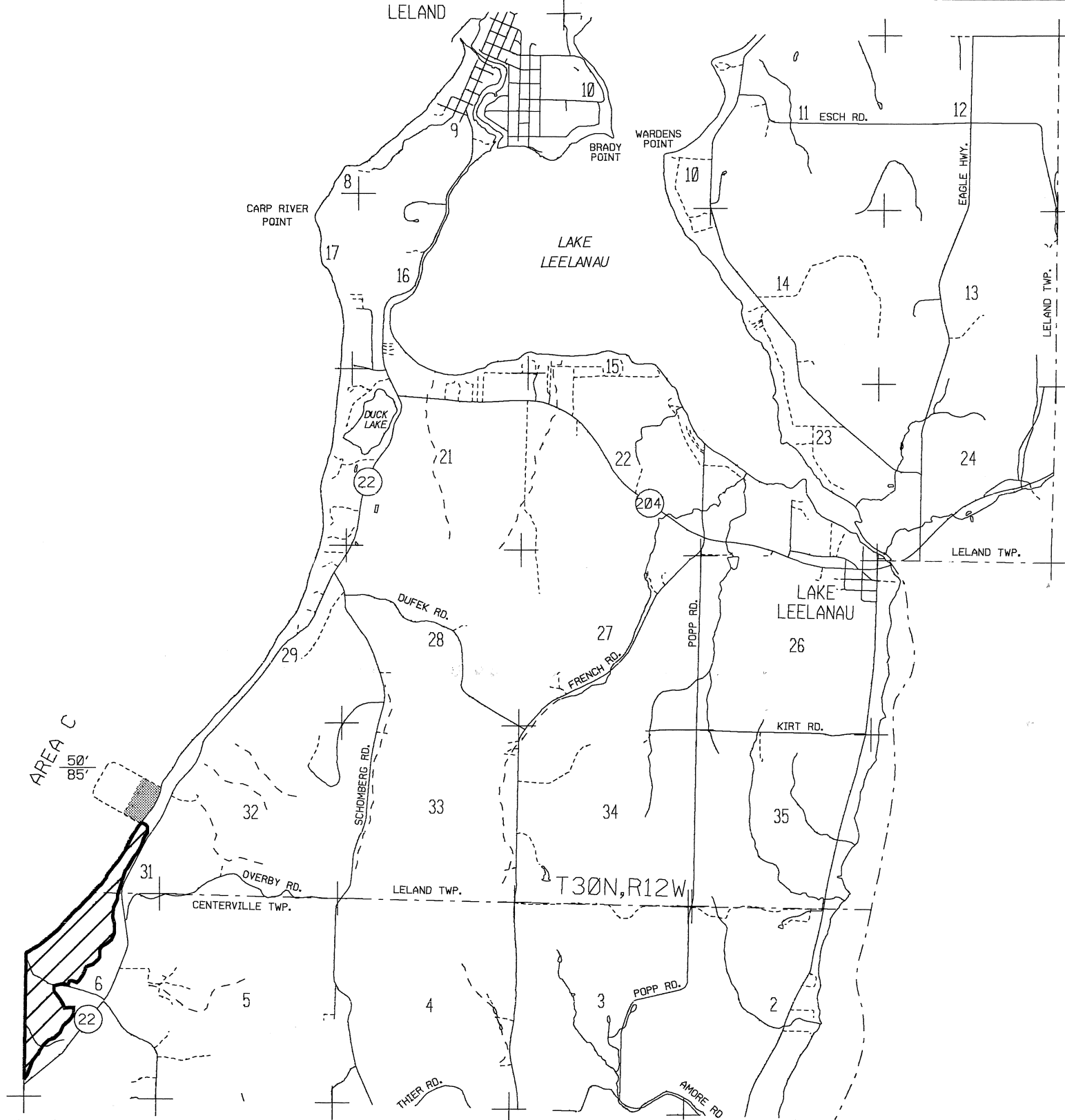
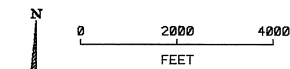
### INFORMATION

MICHIGAN DEPARTMENT OF NATURAL RESOURCES  
LAND AND WATER MANAGEMENT DIVISION  
P.O. BOX 30029  
LANSING, MI 48909  
(517) 373-1950

**GIS**

GREAT LAKES INFORMATION SYSTEM  
MICHIGAN DEPARTMENT OF NATURAL RESOURCES  
LAND AND WATER MANAGEMENT DIVISION

02-11-93



# Parcels in High Risk Erosion Areas of Leland Township, Leelanau County

HREAs identified North to South      Date of Designation: March 11, 1993

HREA*	Sequence No.	Parcel Identification Number	Rate (feet/year)	30 yr PRD*	60 yr PRD*
A1	1	45-009-113-001-40	1.5	60	105
A1	1.1	45-009-113-001-50	1.5	60	105
A1	1.11	45-009-113-001-60	1.5	60	105
A1	1.12	45-009-113-001-70	1.5	60	105
A1	2	45-009-124-002-00	1.5	60	105
A1	3	45-009-124-001-00	1.5	60	105
A1	4	45-009-124-001-25	1.5	60	105
A1	4.1	45-009-124-001-19	1.5	60	105
A1	5	45-009-124-001-15	1.5	60	105
A1	6	45-009-124-001-10	1.5	60	105
A1	7	45-009-124-001-30	1.5	60	105
A1	8	45-009-124-001-20	1.5	60	105
A1	9	45-009-660-001-00	1.5	60	105
A1	10	45-009-660-003-00	1.5	60	105
A1	11	45-009-660-005-00	1.5	60	105
A1	12	45-009-660-007-10	1.5	60	105
A1	13	45-009-660-011-00	1.5	60	105
A1	14	45-009-660-013-00	1.5	60	105
A1	15	45-009-660-015-00	1.5	60	105

HREA\* - Some parcels may be in multiple HREAs due to their large size.

30 yr PRD\* is the Projected Recession Distance (feet) landward from the Erosion Hazard Line for readily moveable structures including those structures 3,500 square feet or less and built on a basement, crawlspace or pilings. Additional restrictions may apply per Administrative Rules 281.21-22.

60 yr PRD\* is the Projected Recession Distance (feet) landward from the Erosion Hazard Line for non-readily moveable structures such as large structures and septic systems.

**Designation runs with the land including subsequent splits. Absence of a property number does not guarantee the property is located outside of an HREA. Contact the Great Lakes Shorelands Unit, Water Resources Division, DEQ in Lansing or the local DEQ field office for assistance.**

# Parcels in High Risk Erosion Areas of Leland Township, Leelanau County

HREAs identified North to South      Date of Designation: March 11, 1993

HREA*	Sequence No.	Parcel Identification Number	Rate (feet/year)	30 yr PRD*	60 yr PRD*
A1	16	45-009-660-017-00	1.5	60	105
A1	17	45-009-660-019-00	1.5	60	105
A1	18	45-009-660-021-00	1.5	60	105
A1	19	45-009-660-023-00	1.5	60	105
A1	20	45-009-660-024-00	1.5	60	105
A1	21	45-009-660-025-00	1.5	60	105
A1	22	45-009-660-026-00	1.5	60	105
A1	23	45-009-660-027-00	1.5	60	105
A1	24	45-009-124-009-00	1.5	60	105
A1	25	45-009-124-009-30	1.5	60	105
A1	26	45-009-124-009-40	1.5	60	105
A1	27	45-009-124-009-10	1.5	60	105
A1	28	45-009-124-009-20	1.5	60	105
A1	29	45-009-124-015-00	1.5	60	105
A1	30	45-009-124-014-00	1.5	60	105
A1	31	45-009-124-016-00	1.5	60	105
A1	32	45-009-124-014-10	1.5	60	105
A1	33	45-009-124-012-00	1.5	60	105
A1	34	45-009-124-010-00	1.5	60	105

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# Parcels in High Risk Erosion Areas of Leland Township, Leelanau County

HREAs identified North to South      Date of Designation: March 11, 1993

HREA*	Sequence No.	Parcel Identification Number	Rate (feet/year)	30 yr PRD*	60 yr PRD*
A1	35	45-009-124-011-10	1.5	60	105
A1	36	45-009-124-011-00	1.5	60	105
A1	37	45-009-560-011-00	1.5	60	105
A1	38	45-009-560-009-00	1.5	60	105
A1	39	45-009-560-008-00	1.5	60	105
A1	40	45-009-560-007-00	1.5	60	105
A1	41	45-009-560-006-00	1.5	60	105
A1	42	45-009-560-005-00	1.5	60	105
A1	43	45-009-560-004-50	1.5	60	105
A1	44	45-009-560-002-00	1.5	60	105
A1	44.9	45-009-560-001-50	1.5	60	105
A1	45	45-009-560-001-00	1.5	60	105
B1	46	45-009-127-005-20	1.7	65	115
B1	47	45-009-127-003-00	1.7	65	115
B1	48	45-009-127-005-00	1.7	65	115
B1	49	45-009-127-005-10	1.7	65	115
B1	50	45-009-127-029-01	1.7	65	115
B1	51	45-009-127-011-01	1.7	65	115
B1	52	45-009-127-010-00	1.7	65	115

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# Parcels in High Risk Erosion Areas of Leland Township, Leelanau County

HREAs identified North to South      Date of Designation: March 11, 1993

HREA*	Sequence No.	Parcel Identification Number	Rate (feet/year)	30 yr PRD*	60 yr PRD*
B1	53	45-009-127-009-00	1.7	65	115
B1	54	45-009-127-028-00	1.7	65	115
B1	55	45-009-127-027-00	1.7	65	115
B1	56	45-009-127-024-00	1.7	65	115
B1	56	45-009-127-025-00	1.7	65	115
B1	56	45-009-127-026-00	1.7	65	115
B1	57	45-009-127-006-00	1.7	65	115
B1	58	45-009-127-012-00	1.7	65	115
B1	59	45-009-127-016-00	1.7	65	115
B1	60	45-009-127-018-00	1.7	65	115
B1	61	45-009-127-030-00	1.7	65	115
B1	63	45-009-127-013-00	1.7	65	115
B1	64	45-009-127-020-00	1.7	65	115
B2	65	45-009-127-021-00	3.2	110	205
B2	66	45-009-127-022-00	3.2	110	205
B2	67	45-009-127-023-00	3.2	110	205
B2	68	45-009-127-015-00	3.2	110	205
B2	69	45-009-134-001-00	3.2	110	205
B2	70	45-009-134-024-55	3.2	110	205

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# Parcels in High Risk Erosion Areas of Leland Township, Leelanau County

HREAs identified North to South      Date of Designation: March 11, 1993

HREA*	Sequence No.	Parcel Identification Number	Rate (feet/year)	30 yr PRD*	60 yr PRD*
B2	70.1	45-009-134-024-10	3.2	110	205
B2	70.11	45-009-134-024-20	3.2	110	205
B2	70.12	45-009-134-024-30	3.2	110	205
B2	71	45-009-134-016-10	3.2	110	205
B3	72	45-009-134-016-25	1.8	70	125
B3	73	45-009-134-016-20	1.8	70	125
B3	74	45-009-134-016-15	1.8	70	125
B3	74.1	45-009-134-017-25	1.8	70	125
B3	75	45-009-134-017-00	1.8	70	125
B3	75.1	45-009-134-017-30	1.8	70	125
B3	76	45-009-134-016-00	1.8	70	125
B3	77	45-009-134-021-00	1.8	70	125
B3	77.1	45-009-134-021-10	1.8	70	125
B3	78	45-009-134-022-00	1.8	70	125
B3	78.1	45-009-133-001-40	1.8	70	125
B3	79	45-009-133-001-30	1.8	70	125
B3	80	45-009-133-001-00	1.8	70	125
B3	81	45-009-133-001-10	1.8	70	125
B3	82	45-009-133-001-20	1.8	70	125

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# Parcels in High Risk Erosion Areas of Leland Township, Leelanau County

HREAs identified North to South      Date of Designation: March 11, 1993

HREA*	Sequence No.	Parcel Identification Number	Rate (feet/year)	30 yr PRD*	60 yr PRD*
B3	82.1	45-009-133-001-25	1.8	70	125
B3	83	45-009-003-002-20	1.8	70	125
B3	84	45-009-003-002-30	1.8	70	125
B3	85	45-009-004-011-00	1.8	70	125
B3	86	45-009-570-019-00	1.8	70	125
B3	87	45-009-570-018-00	1.8	70	125
B3	88	45-009-570-017-00	1.8	70	125
B3	89	45-009-570-016-00	1.8	70	125
B3	90	45-009-570-015-00	1.8	70	125
B3	90.1	45-009-570-015-40	1.8	70	125
B3	91	45-009-004-021-00	1.8	70	125
B3	92	45-009-004-020-10	1.8	70	125
B4	93	45-009-004-017-00	1.2	50	85
B4	94	45-009-004-016-00	1.2	50	85
B4	95	45-009-640-012-00	1.2	50	85
B4	95.1	45-009-640-011-00	1.2	50	85
B4	96	45-009-640-009-00	1.2	50	85
B4	97	45-009-640-008-00	1.2	50	85
B4	98	45-009-640-006-00	1.2	50	85

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# Parcels in High Risk Erosion Areas of Leland Township, Leelanau County

HREAs identified North to South      Date of Designation: March 11, 1993

HREA*	Sequence No.	Parcel Identification Number	Rate (feet/year)	30 yr PRD*	60 yr PRD*
C1	99	45-009-031-032-00	1.2	50	85
C1	100	45-009-031-034-00	1.2	50	85
C1	101	45-009-031-033-00	1.2	50	85
C1	102	45-009-031-031-00	1.2	50	85
C1	102.1	45-009-031-031-10	1.2	50	85
C1	103	45-009-031-022-00	1.2	50	85
C1	104	45-009-031-022-10	1.2	50	85
C1	105	45-009-031-028-00	1.2	50	85
C1	106	45-009-031-020-00	1.2	50	85
C1	107	45-009-031-027-00	1.2	50	85
C1	108	45-009-031-026-00	1.2	50	85
C1	109	45-009-031-025-00	1.2	50	85
C1	110	45-009-031-024-00	1.2	50	85

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