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LEVEL II

EASTERN—WESTERN ARCTIC SEA ICE ANALYSIS 1980

AD A098667

PREPARED BY
NAVAL POLAR OCEANOGRAPHY CENTER,
SUITLAND, MD

DISTR
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COMMANDER,
NAVAL OCEANOGRAPHY COMMAND
NSTL STATION, BAY ST. LOUIS, MS 39529

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FOREWORD

The U.S. Navy has a long and colorful history of polar exploration and currently is an active participant in the growing national activity in the Arctic and Antarctic. The strategic importance and increased demand for the natural resources of these areas have resulted in a greater requirement for environmental information. In 1976, the National Oceanic and Atmospheric Administration (NOAA) joined the Navy in forming a Joint Ice Center (JIC) to combine efforts and resources in sea ice analysis and forecasting.

Through 1972, reliable sea ice information in the polar regions was based on a relatively few shore station and ship reports augmented by limited aerial reconnaissance data. These data were further restricted mainly to the relatively small areas observed primarily during the ship operating seasons. The advent of high resolution satellite imagery combined with the ground truth of conventional observations has in recent years enabled a description of the polar ice fields on a semi-synoptic scale in both polar regions.

This publication is the seventh in a continuing yearly series of Arctic sea ice atlases prepared in the Joint Ice Center at the Naval Polar Oceanography Center, Suitland. The atlas contains weekly charts depicting Northern Hemisphere and Great Lakes ice conditions and extents. The information presented was prepared under operational time constraints principally from satellite imagery supplemented by conventional observations. The Great Lakes ice analyses are derived principally from information provided by the National Weather Service Forecast Office, Ann Arbor, Michigan. Table I located on the inside back cover summarizes satellite data availability for 1980.

Commencing wit
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The purpose of
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with the first analysis of 1980, ice concentrations are identified in coverage. Ice concentrations in analyses of prior years, 1979 and entified in oktas or eighths coverage.

e of this atlas is to provide operators and researchers with reliable eric ice analyses. Satellite data limitations and other difficulties ually synthesizing various forms of ice data have evolved, the following res:

ntional shore station, ship and aerial ice reconnaissance observations are charts and evaluated for timeliness.

lite data is analyzed for ice information content, with the most recent olution considered first. Synthesis of conventional with satellite data analysis.

e sufficient data is not available to define the sea ice limit, an oundary is depicted. After one week of no data availability the ice based on analyzed theoretical ice drift data and other diagnostic aids. t weeks of no data availability the ice edges approach seasonal mean

Naval Polar Oceanography Center
Navy Department
4301 Suitland Road
Washington, DC 20390

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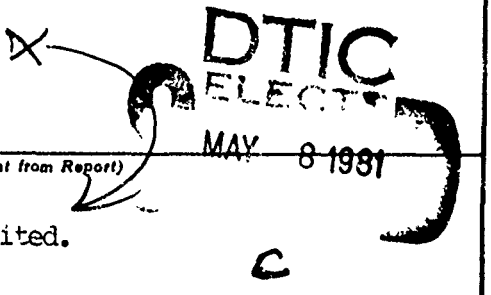

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Ice analysis, sea ice, ice charts, Arctic ice, Western Arctic, Eastern Arctic.

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This publication contains the separate weekly analysis charts of sea ice in the Eastern and Western Arctic Basins for 1980. Ice free, Southern limits, types and concentrations of sea ice are depicted. Ice analysis of the Great Lakes region are included for periods of ice occurrence.

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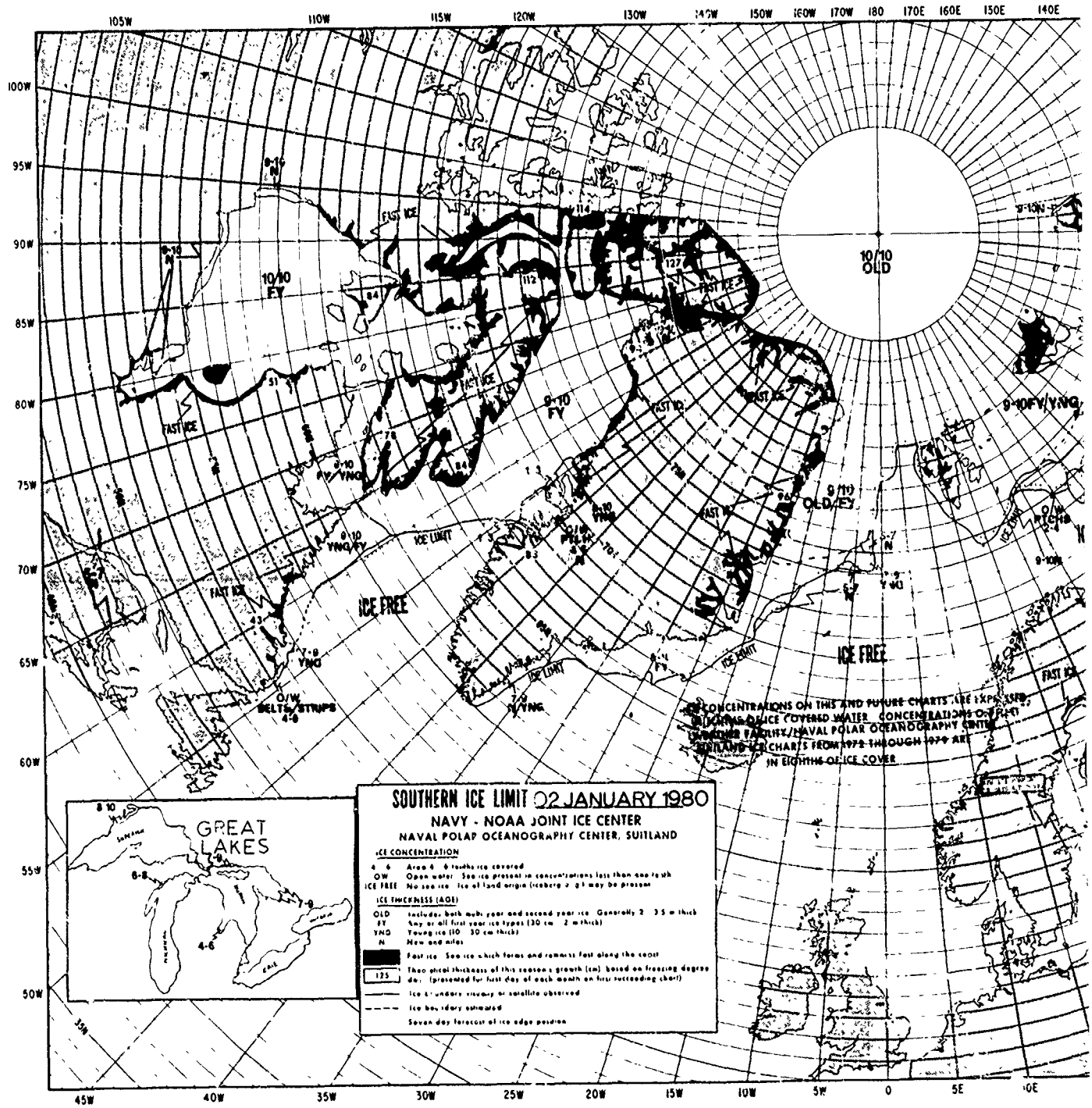
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ICE LIMIT
ICE FREE
O/W BELTS/STRIPS 4-6
SOUTHERN ICE LIMIT 02 JANUARY 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (icebergs) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Say or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice See ice which forms and remains fast along the coast
Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
GREAT LAKES
8-10
6-8
4-6
7-9

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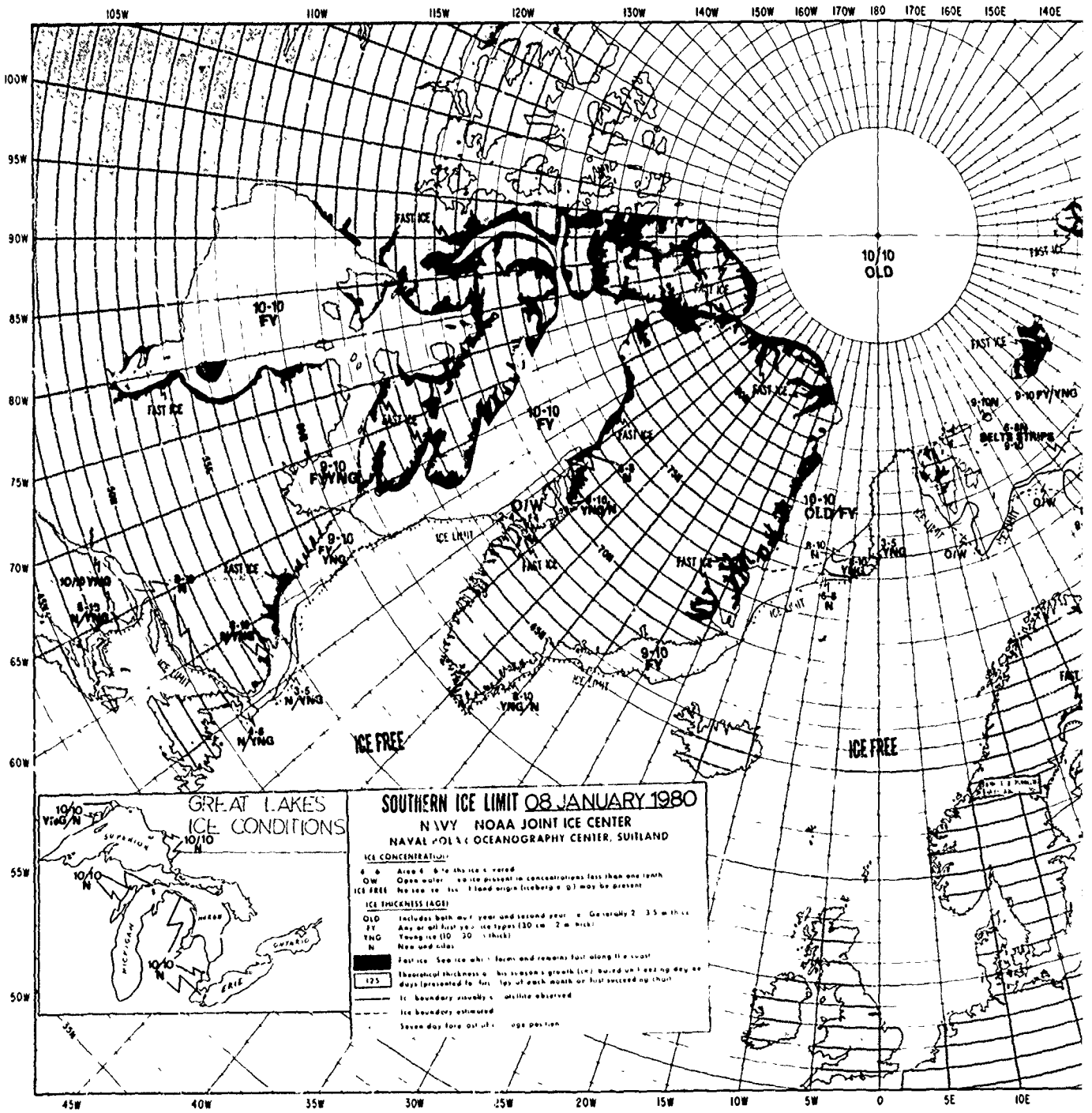
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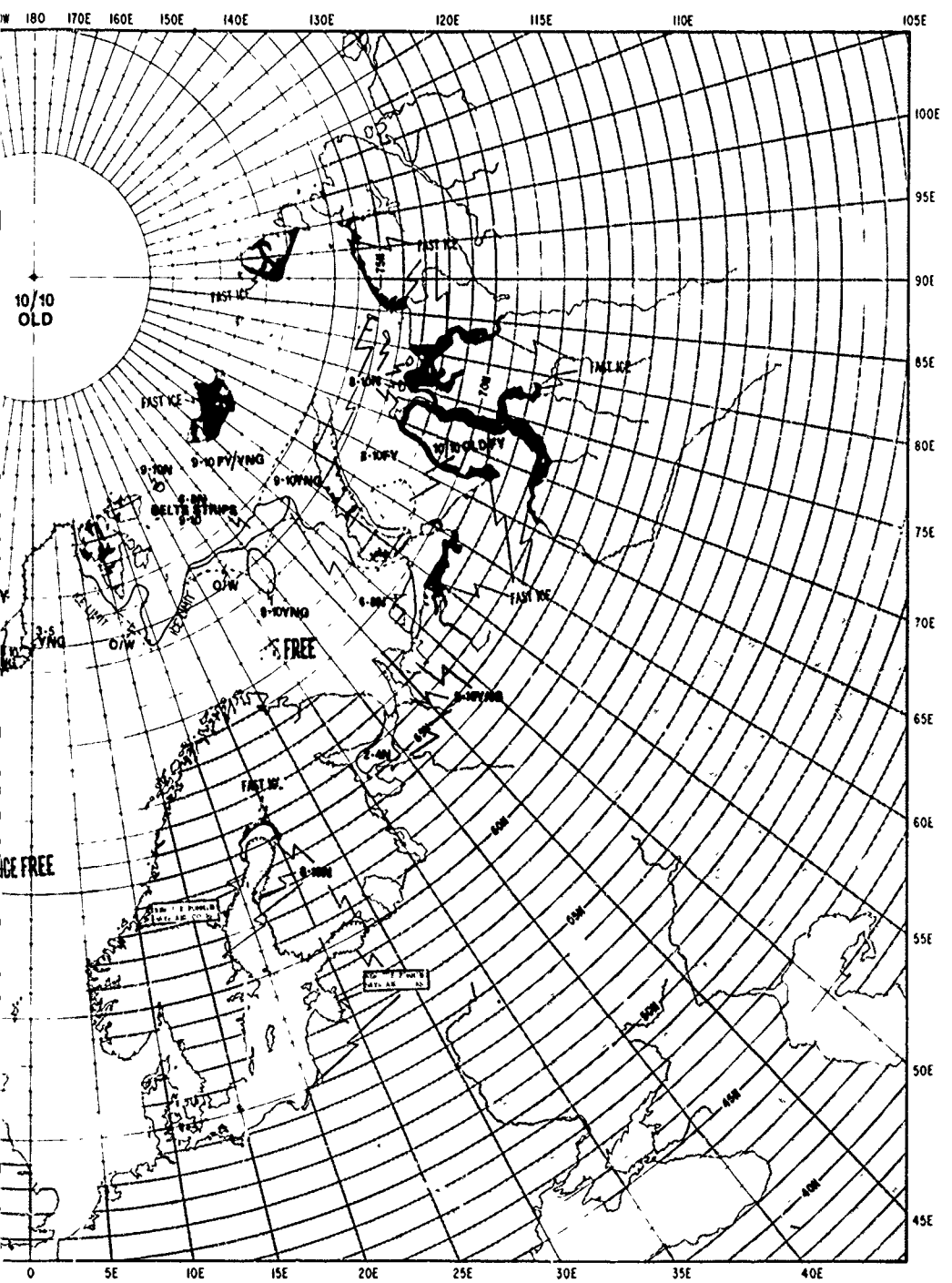
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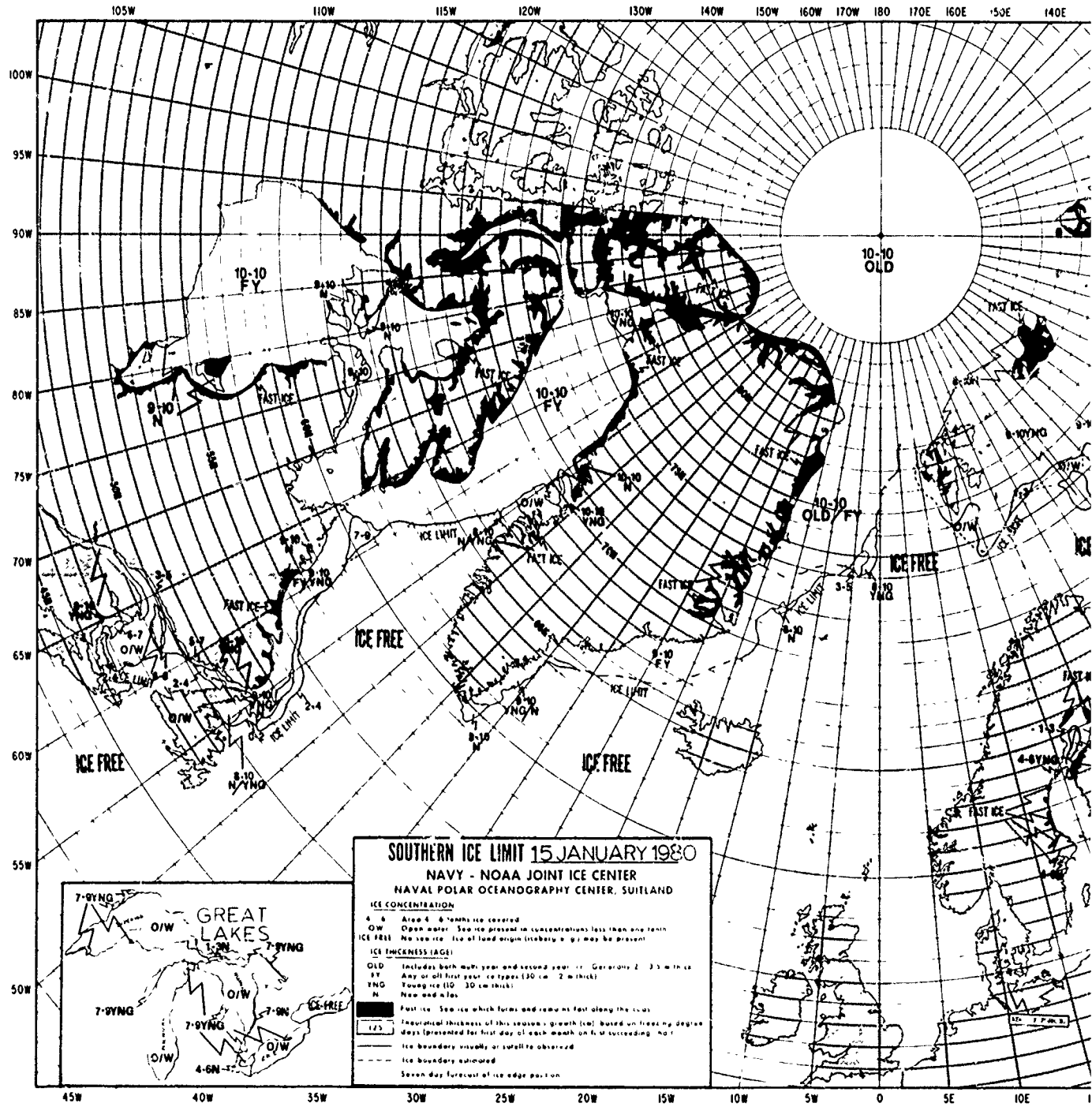
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GREAT LAKES
SOUTHERN ICE LIMIT 15 JANUARY 1980
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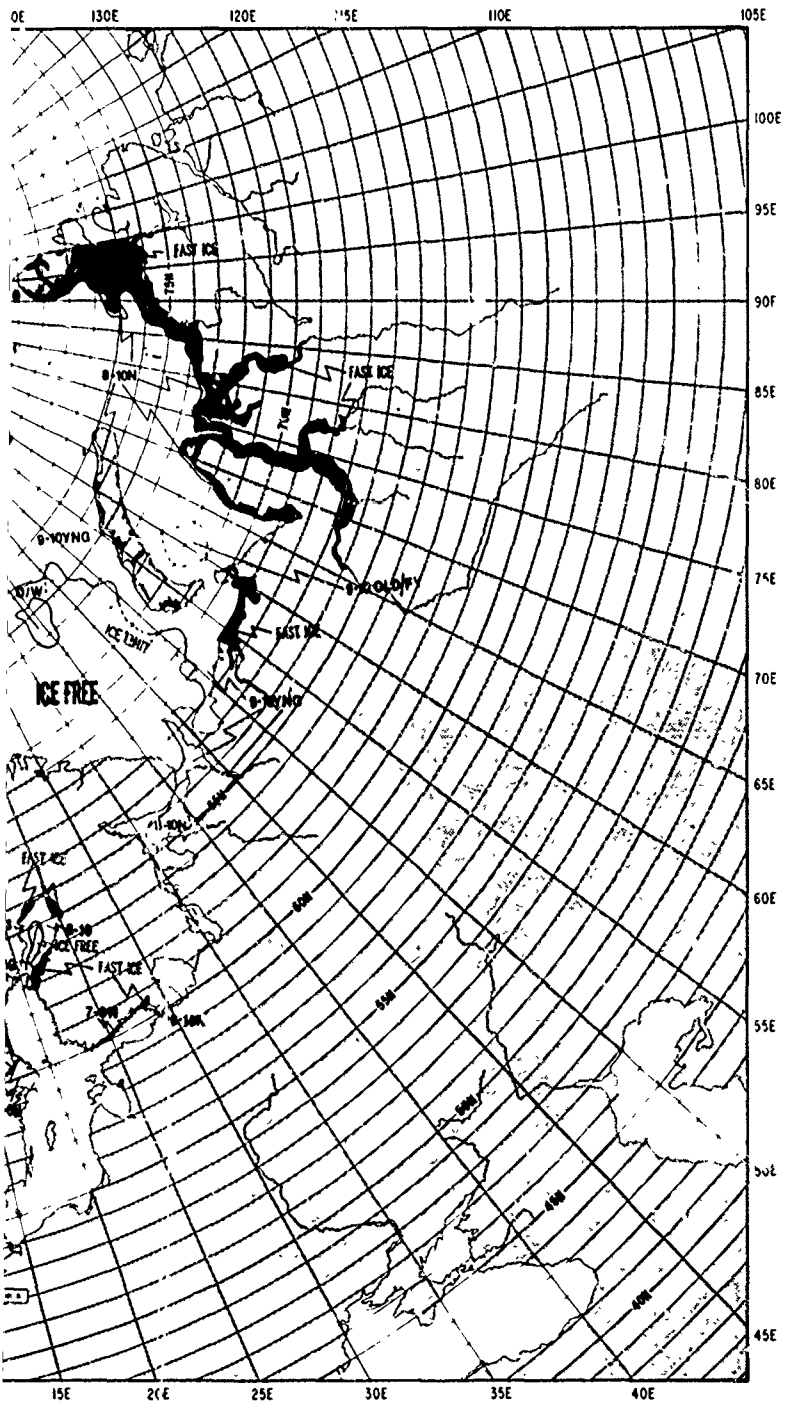
ICE CONCENTRATION
ICE THICKNESS (AGE)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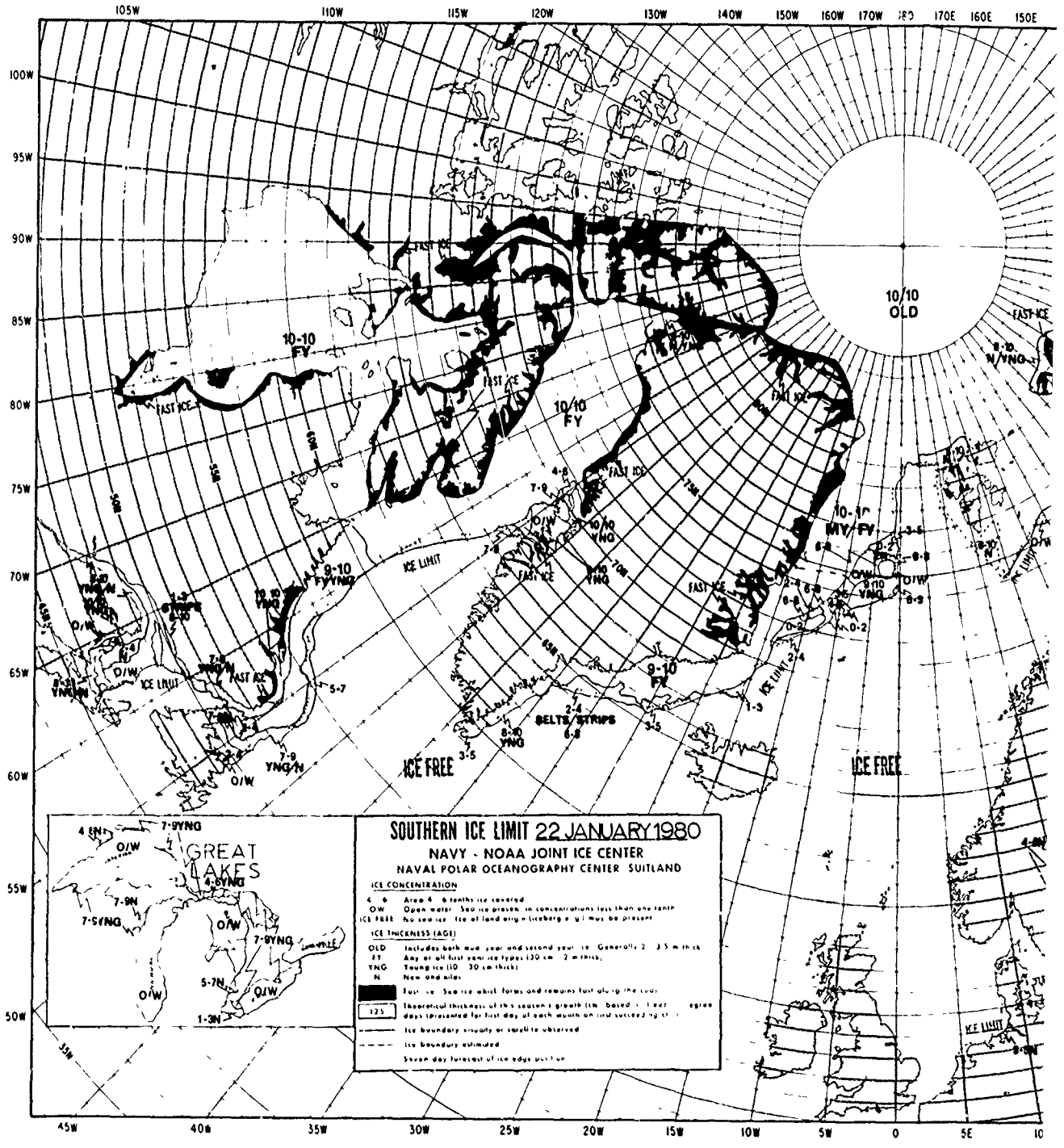
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ICE CONCENTRATION
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OW Open water Sea ice present in concentrations less than one tenth
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Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
10/10 OLD
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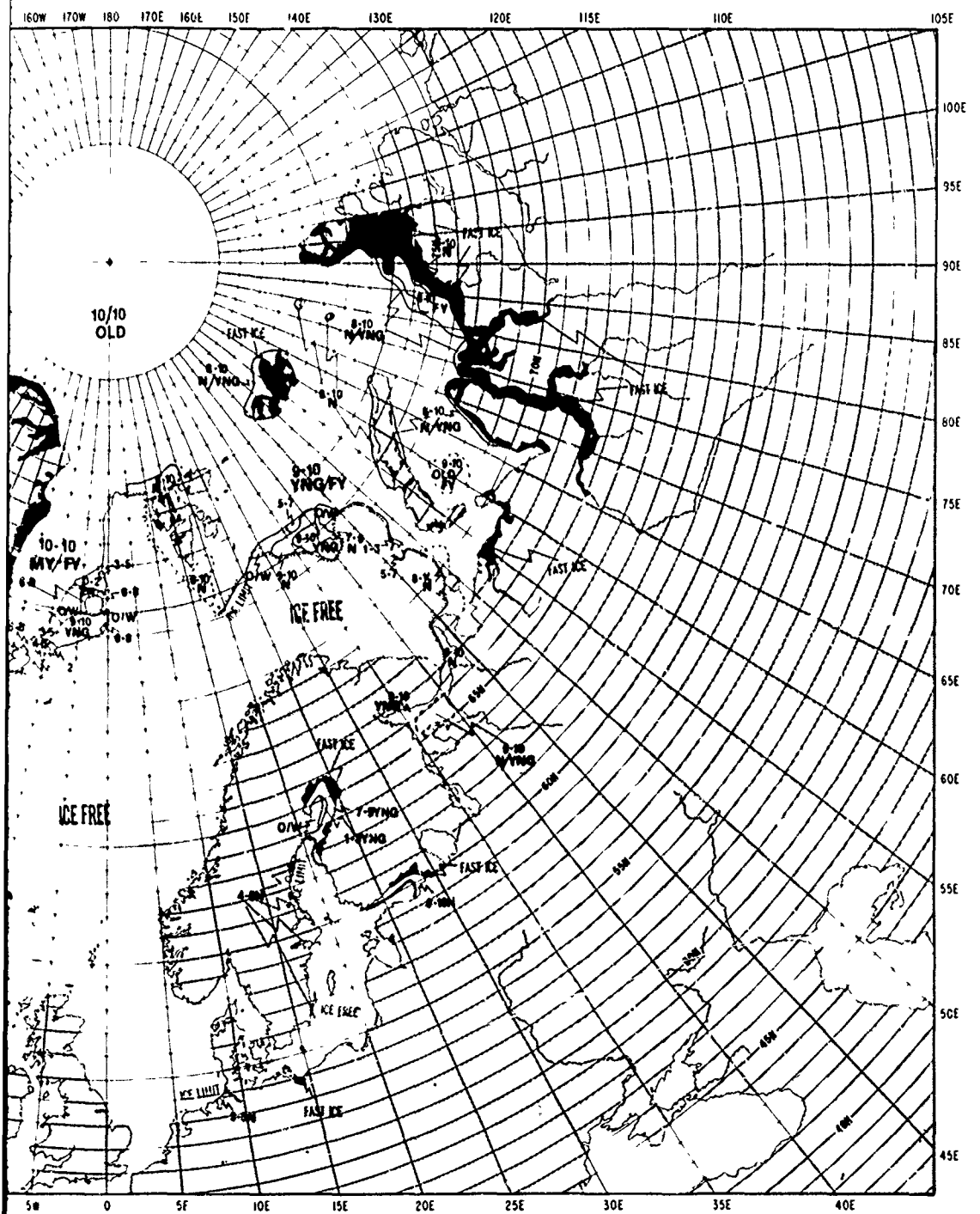

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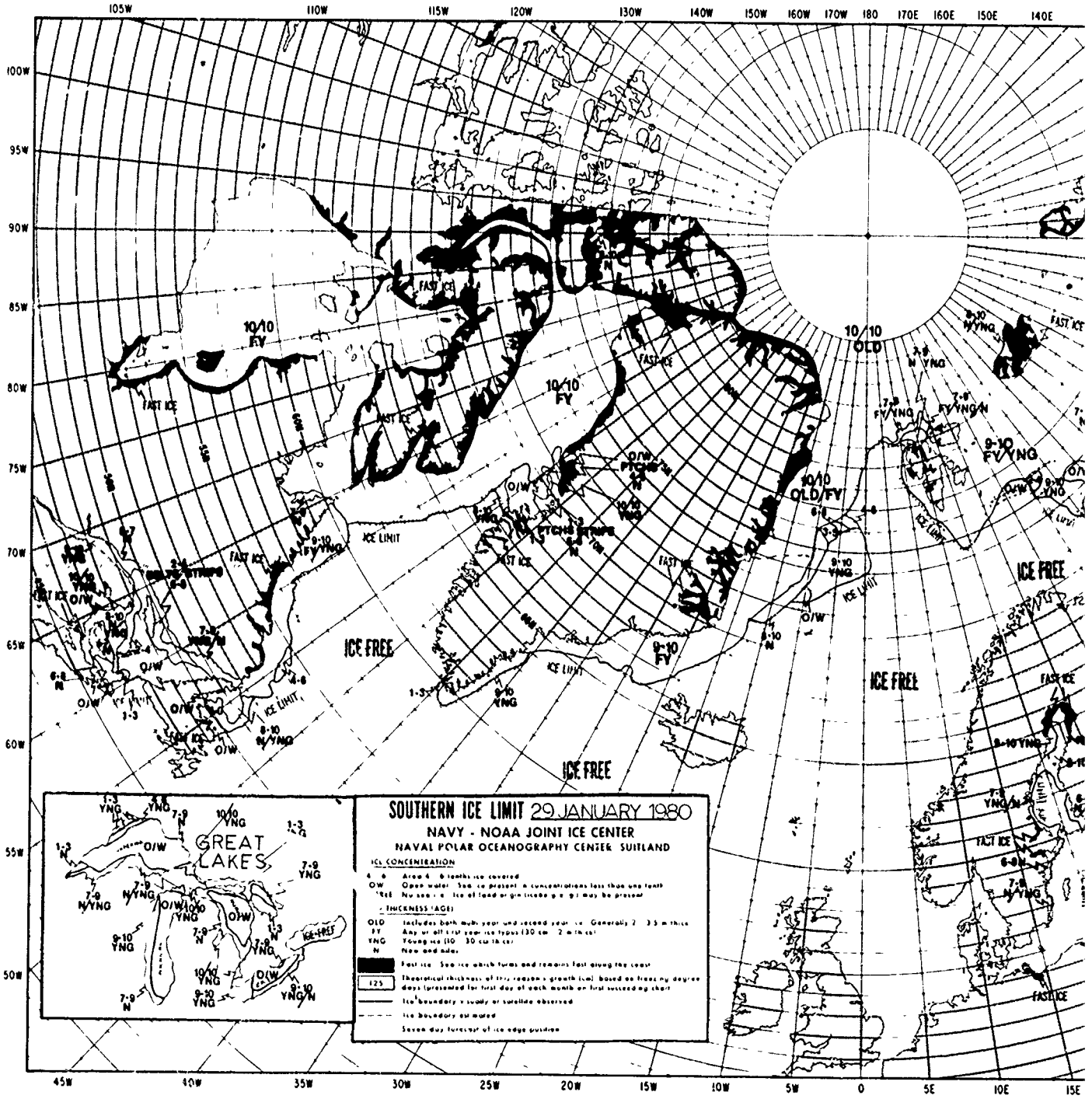
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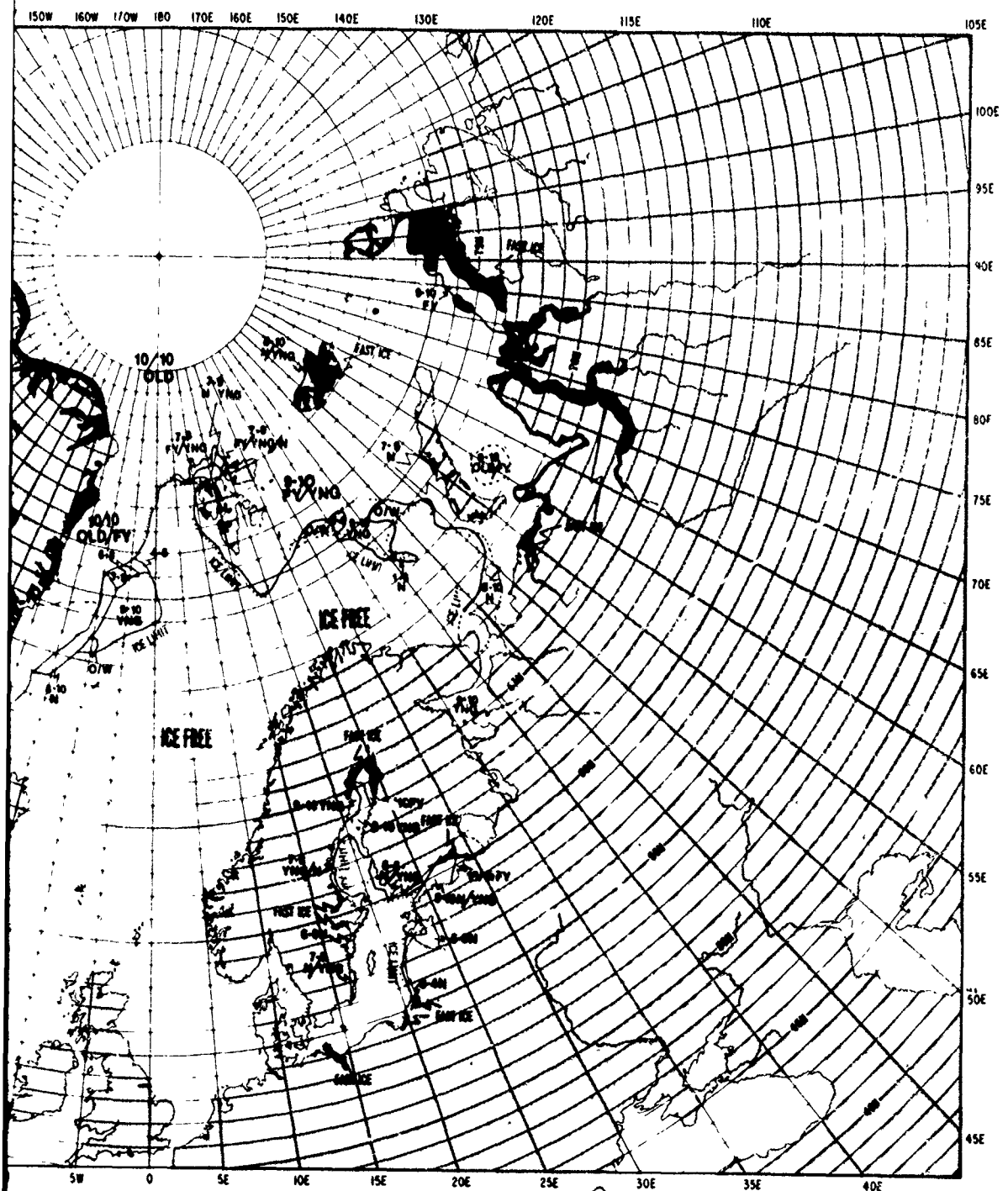
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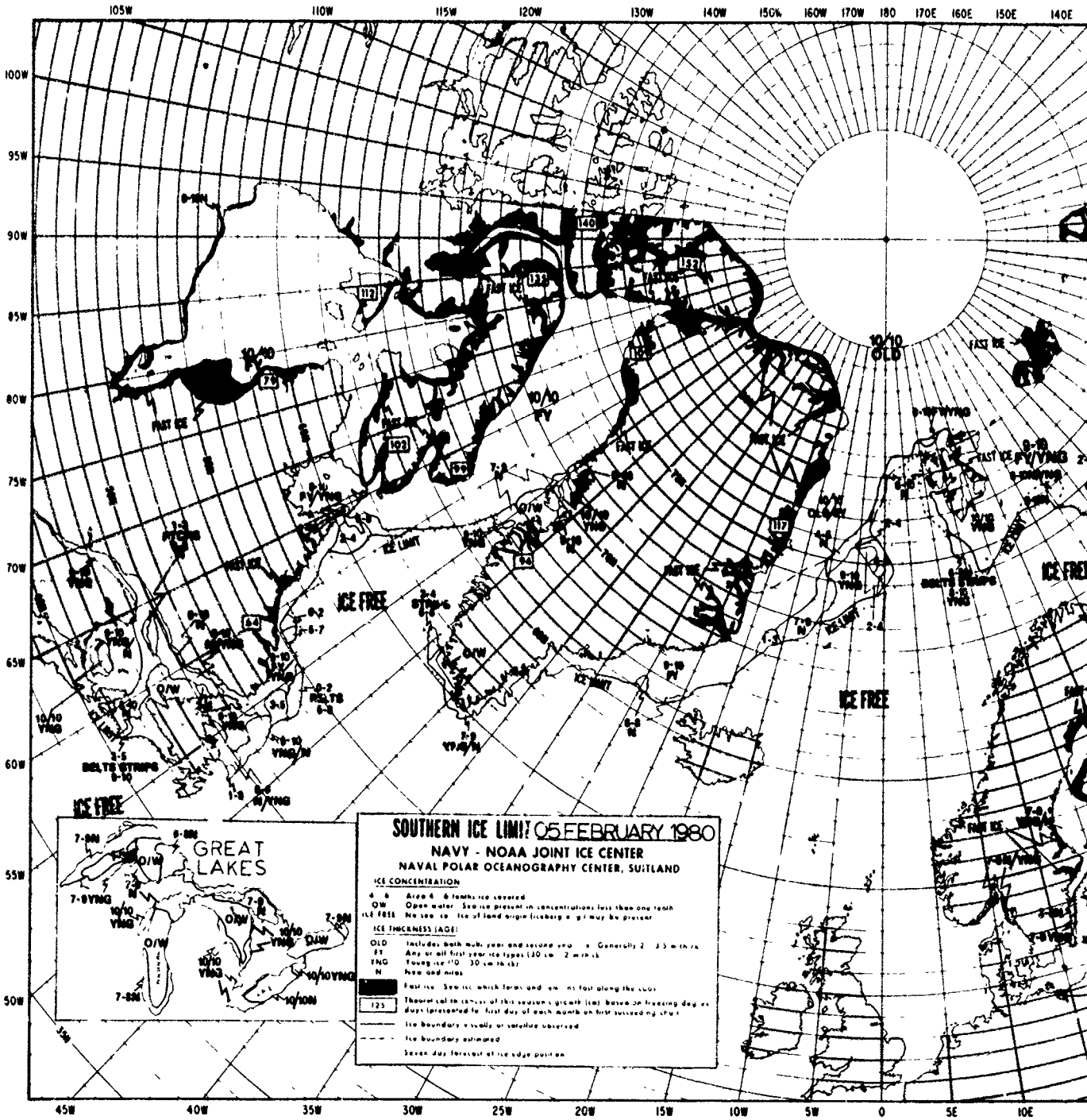
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SOUTHERN ICE LIMIT 05 FEBRUARY 1980
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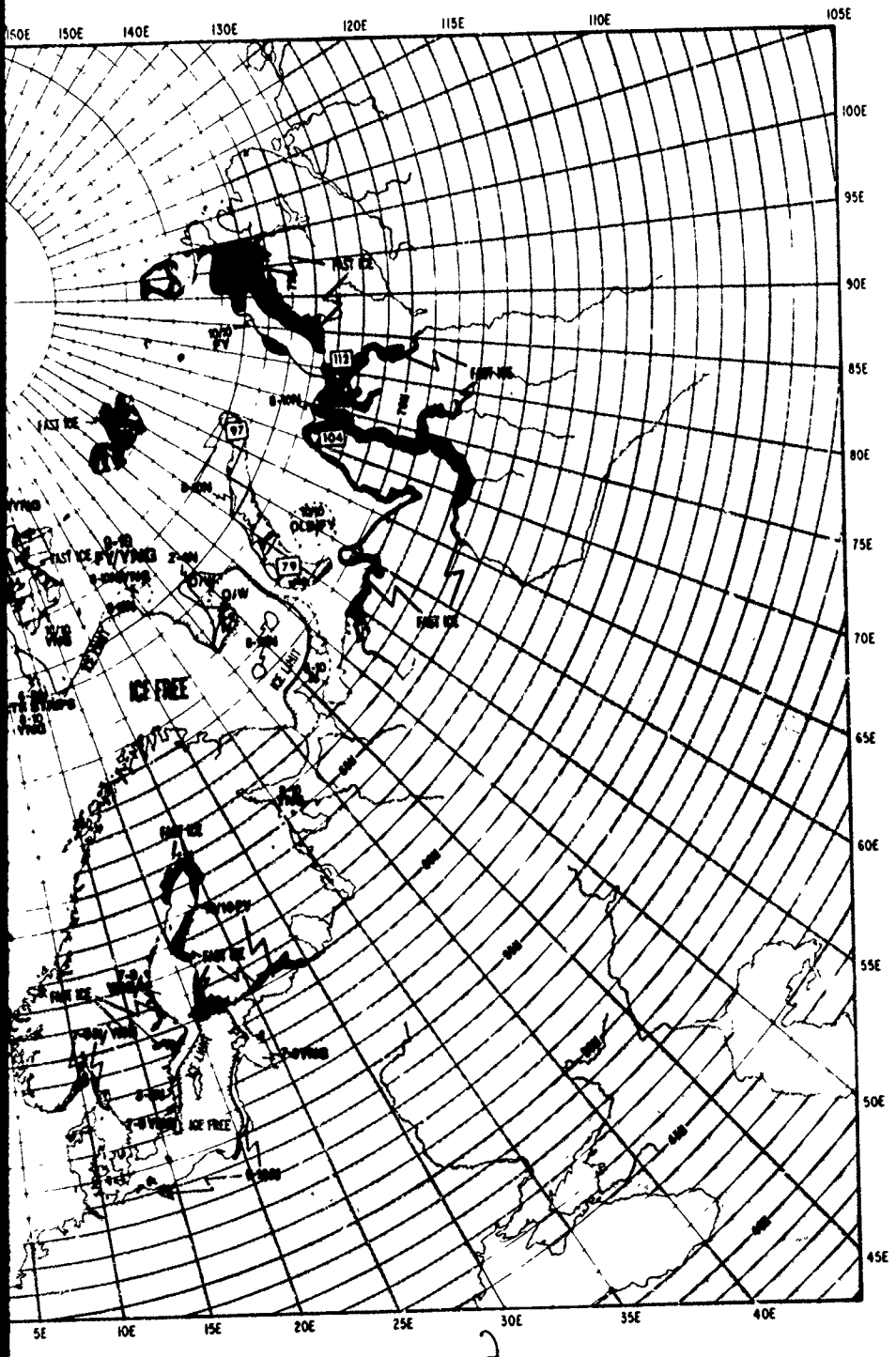
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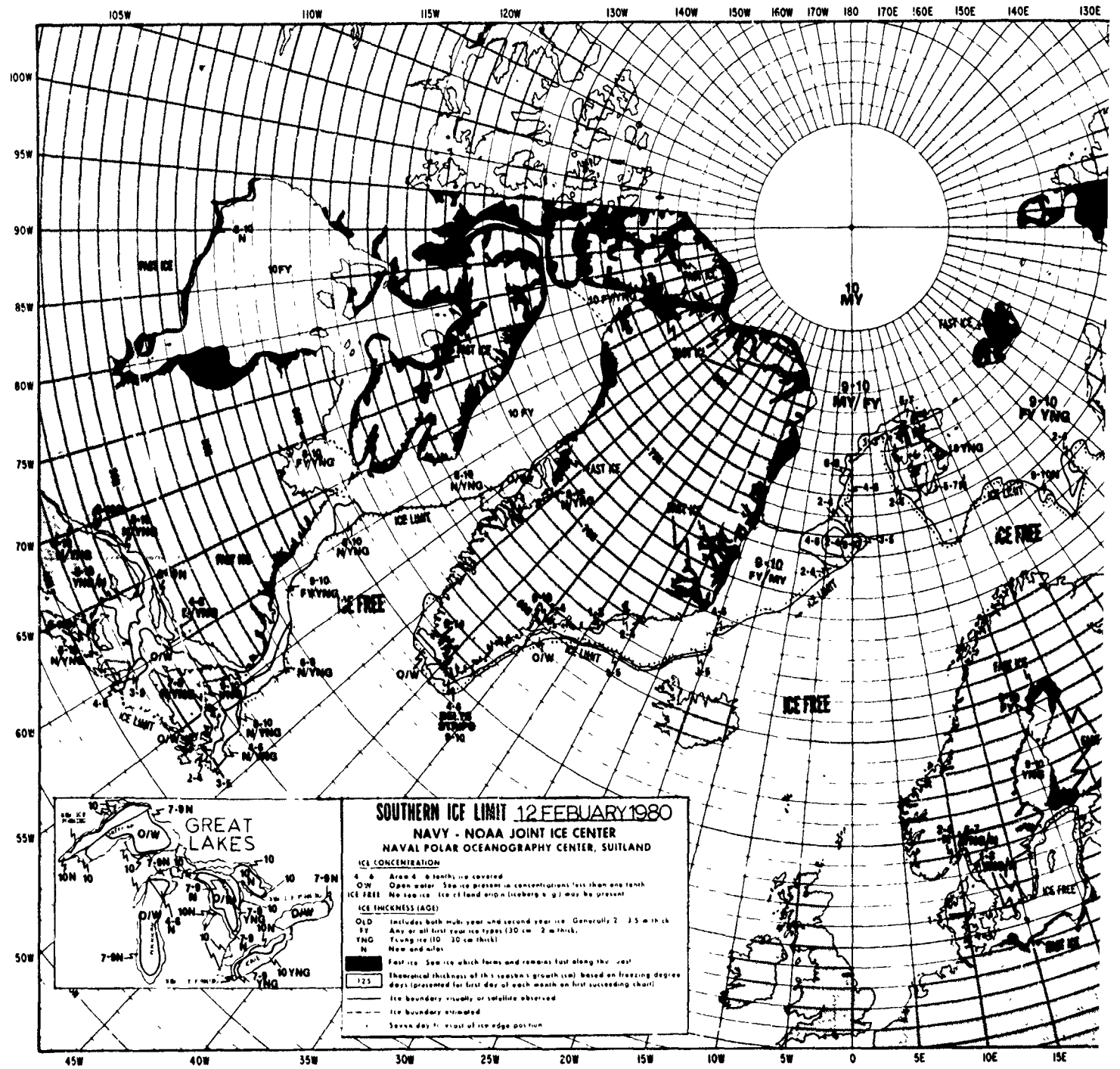
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ICE CONCENTRATION
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GREAT LAKES
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ICE LIMIT
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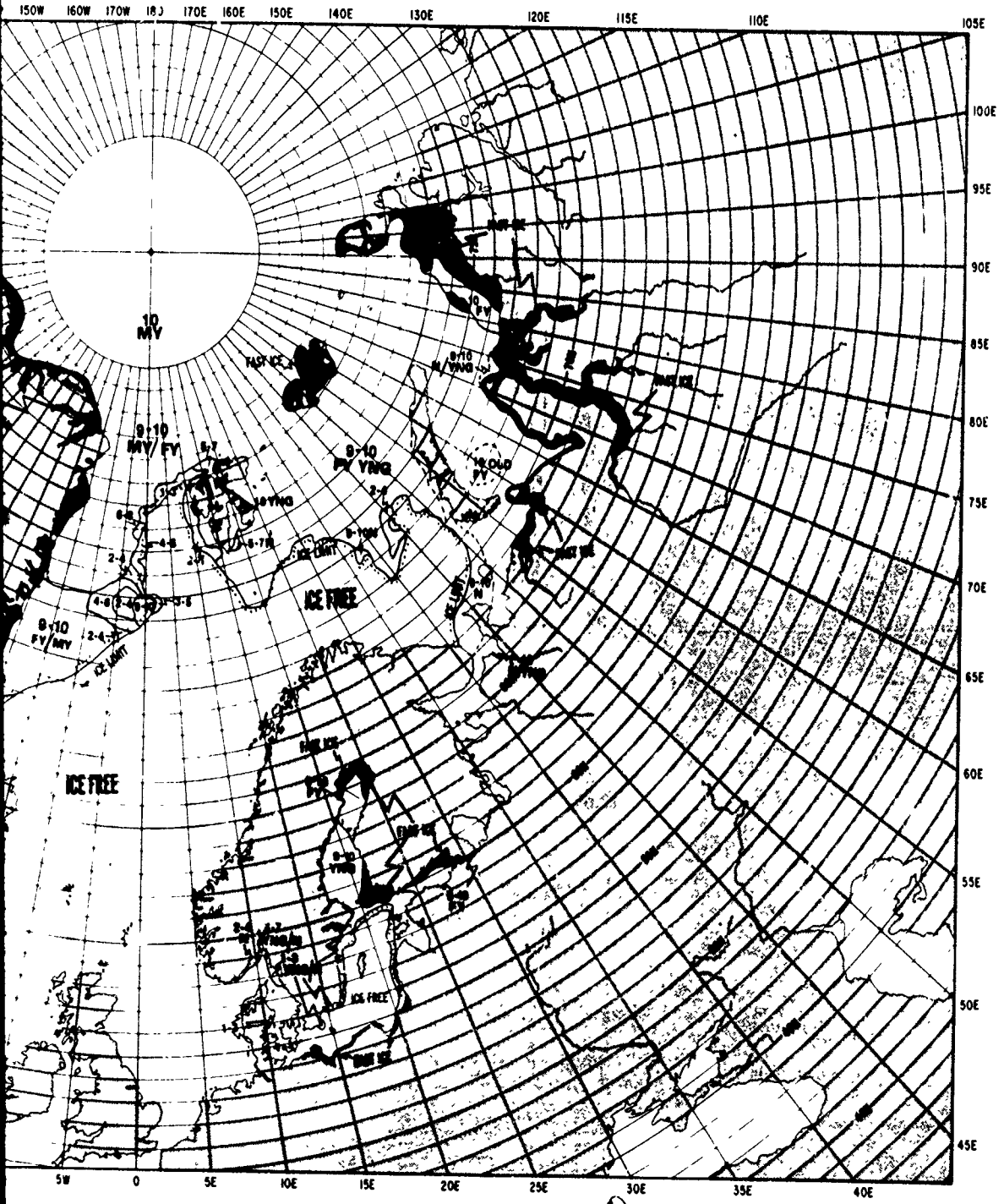
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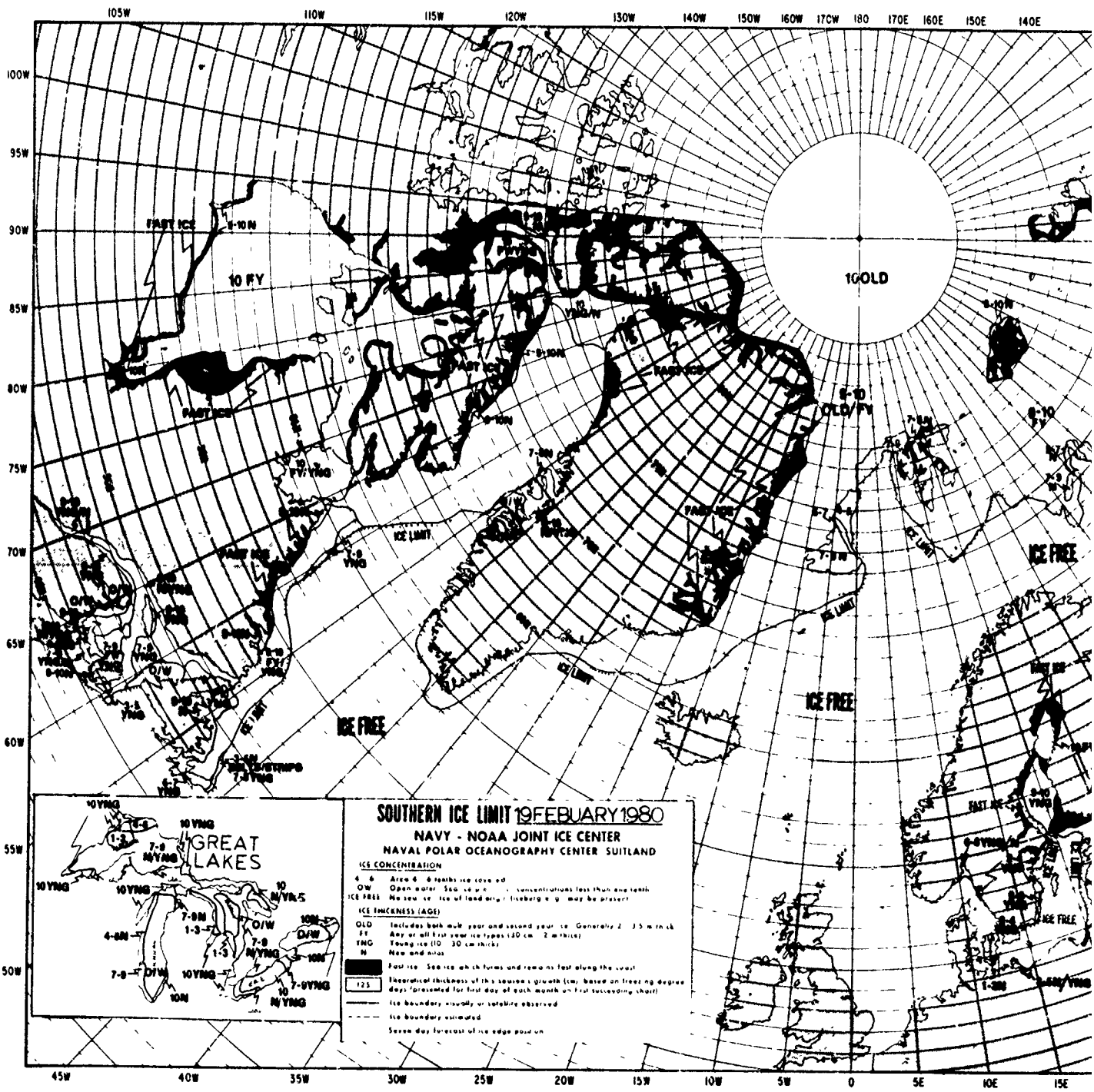
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SOUTHERN ICE LIMIT 19FEBUARY1980
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ICE CONCENTRATION
ICE THICKNESS (AGE)
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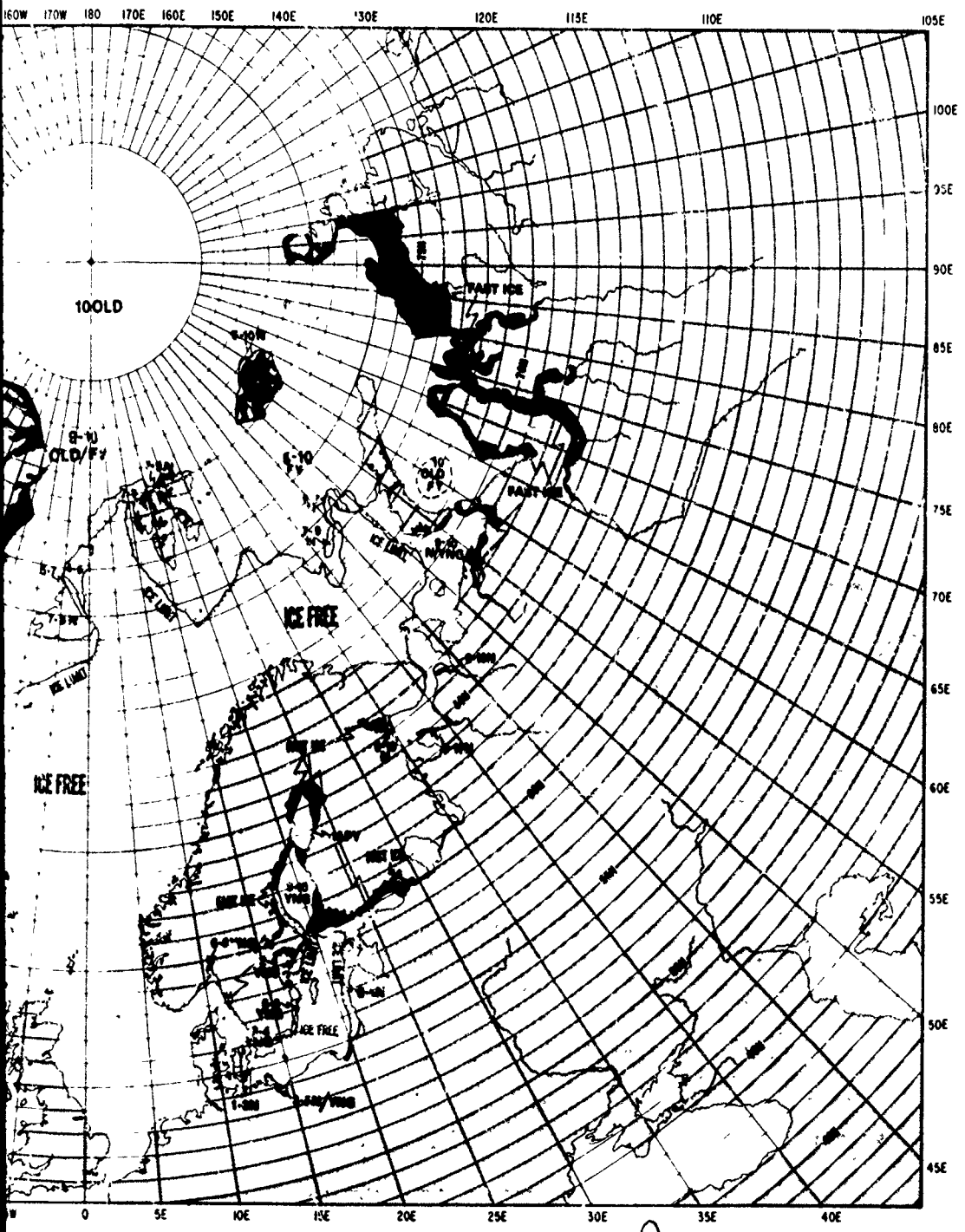
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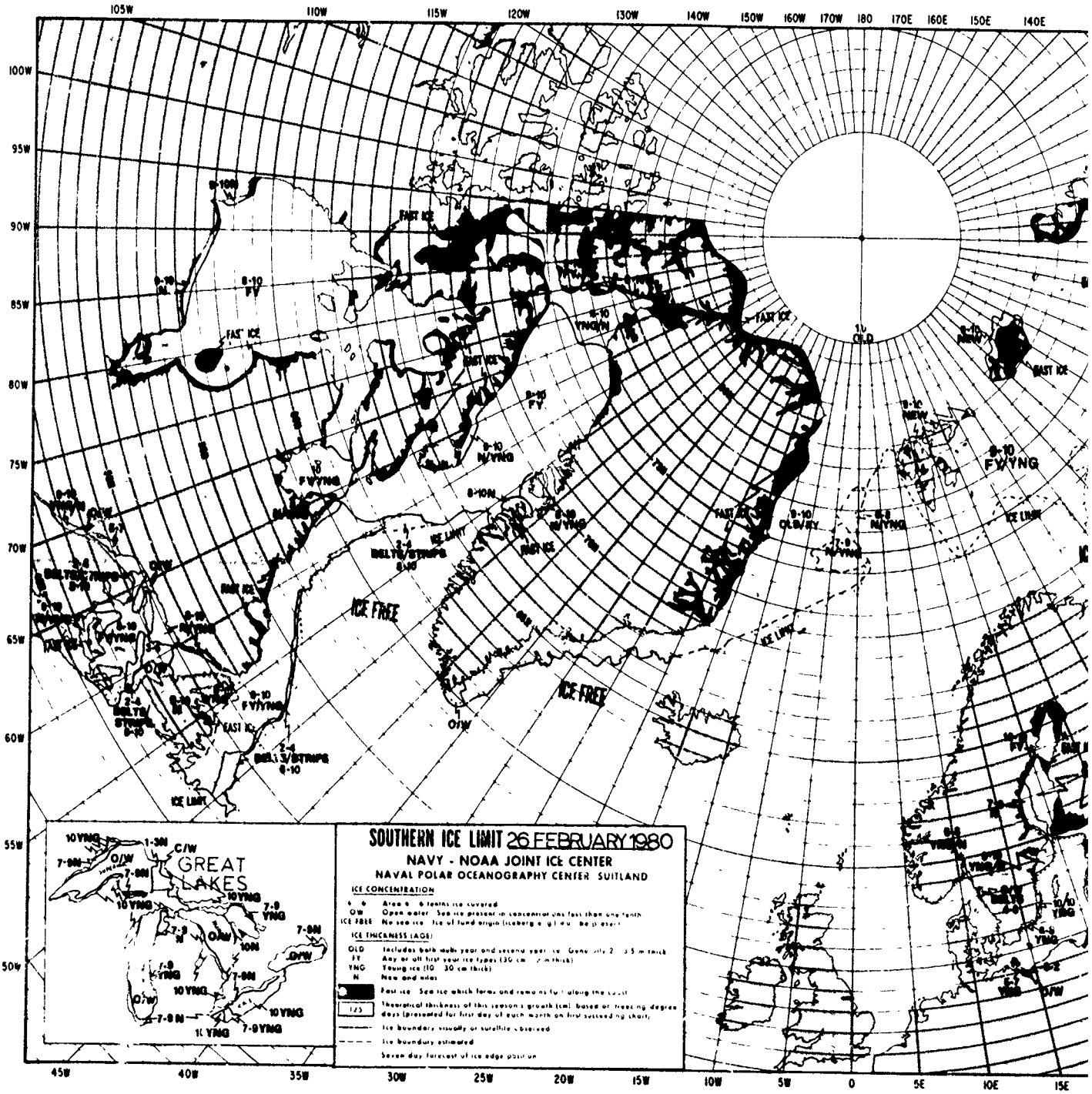
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SOUTHERN ICE LIMIT 26 FEBRUARY 1980
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ICE CONCENTRATION
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Fast ice
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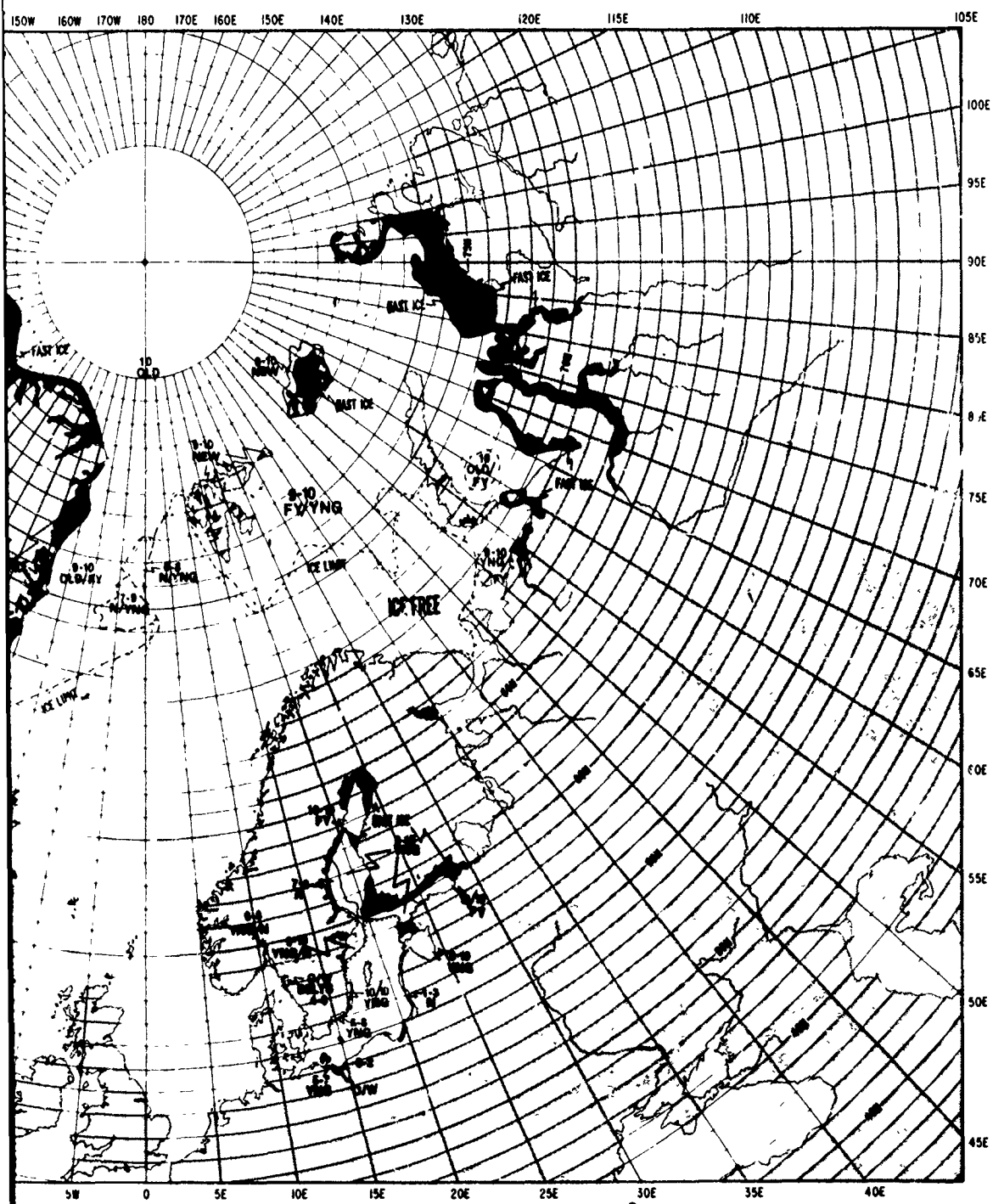
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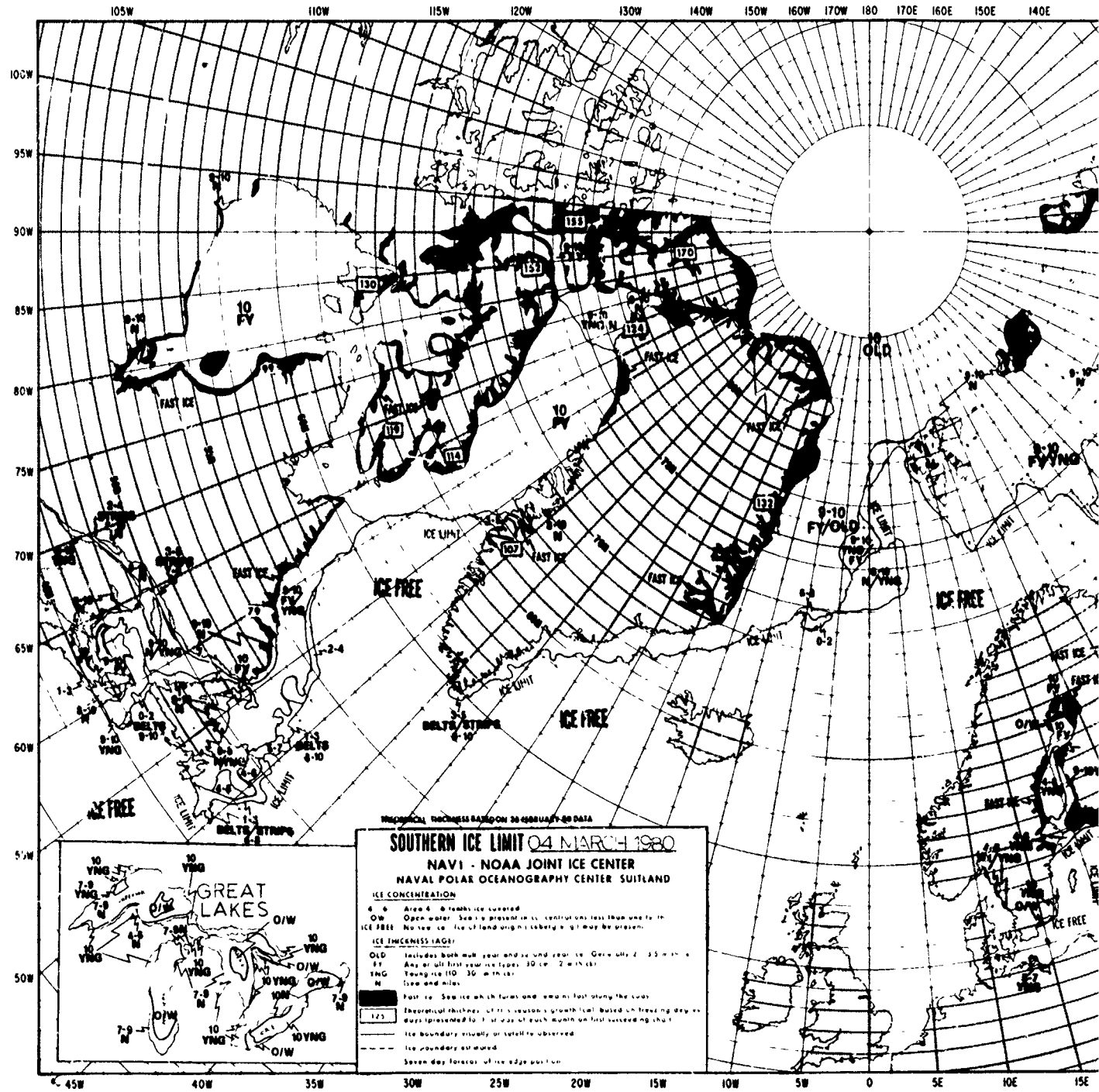
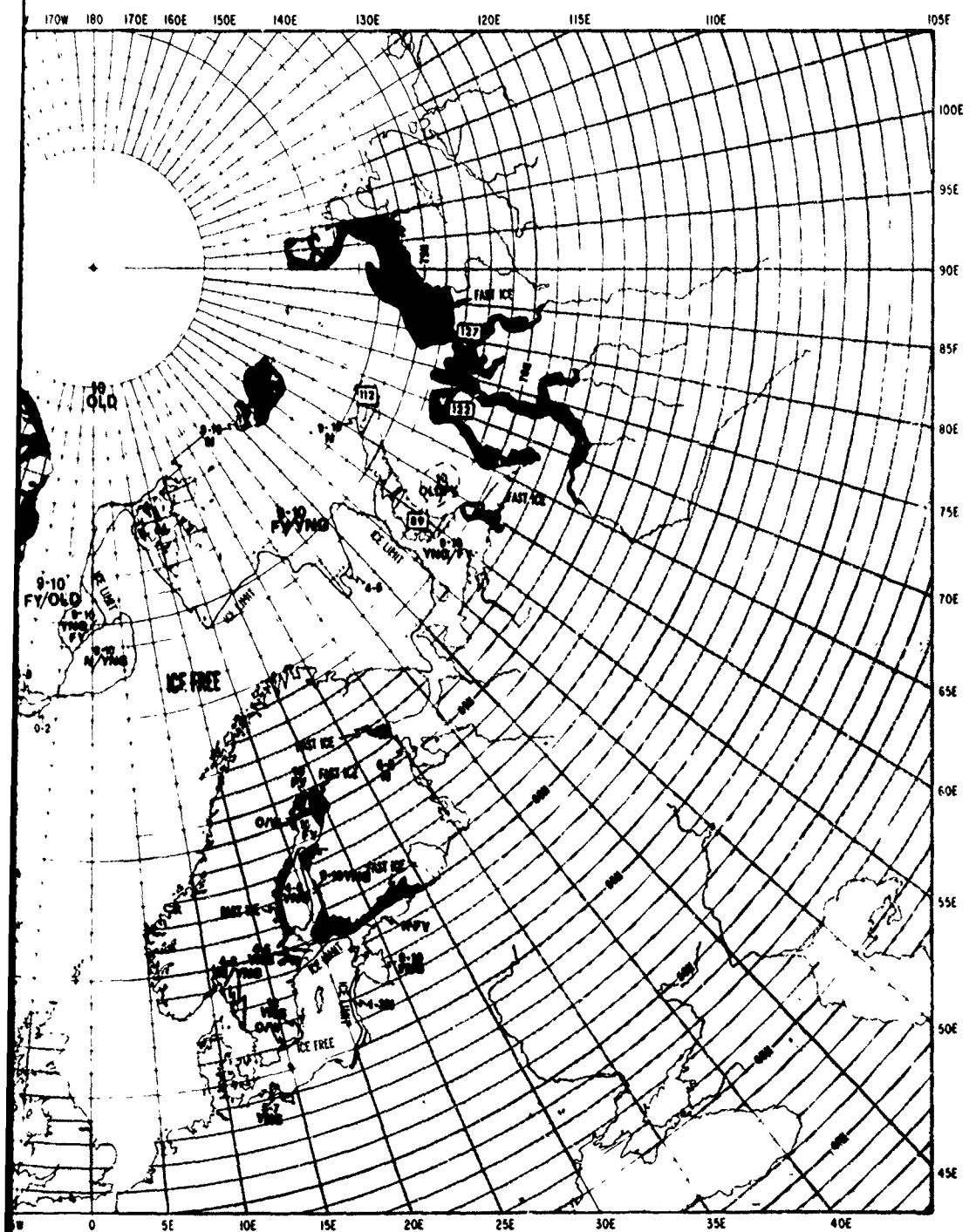


SOUTHERN ICE LIMIT 04 MARCH 1980
NAVI - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
GREAT LAKES
ICE FREE
FAST ICE
ICE LIMIT
10 FY
10 OLD
9-10 FY/OLD
9-10 FY/YNG
BELTS/STRIPS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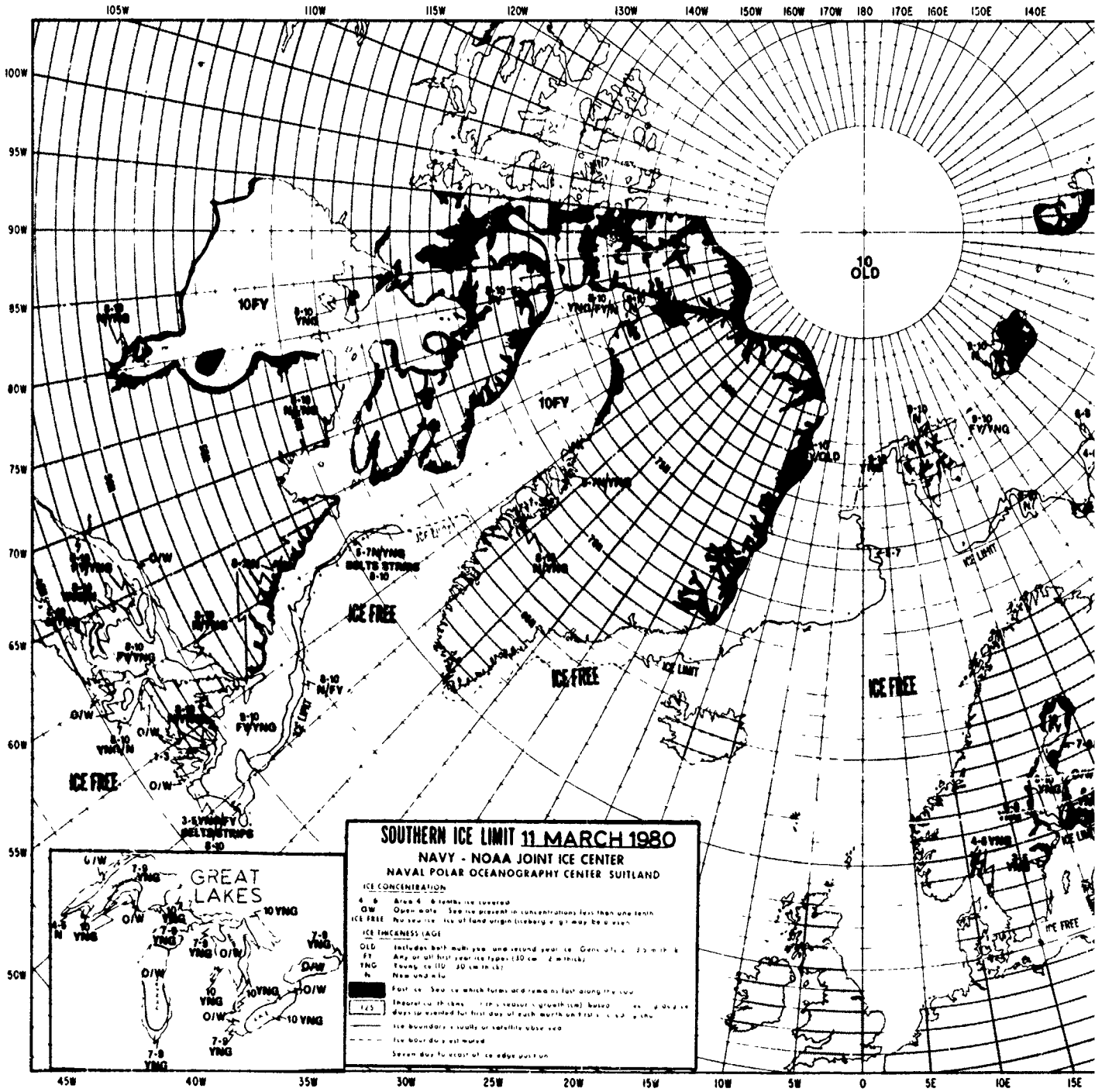
45E
0
5E
10E
15E
20E
25E
30E
35E
40E
FAST ICE
127
122
112
89
OLD
9-10
FY/OLD
9-10
FY/YNG
ICE LIMIT
ICE FREE
FAST ICE
ICE FREE

2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75W
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65W
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55W
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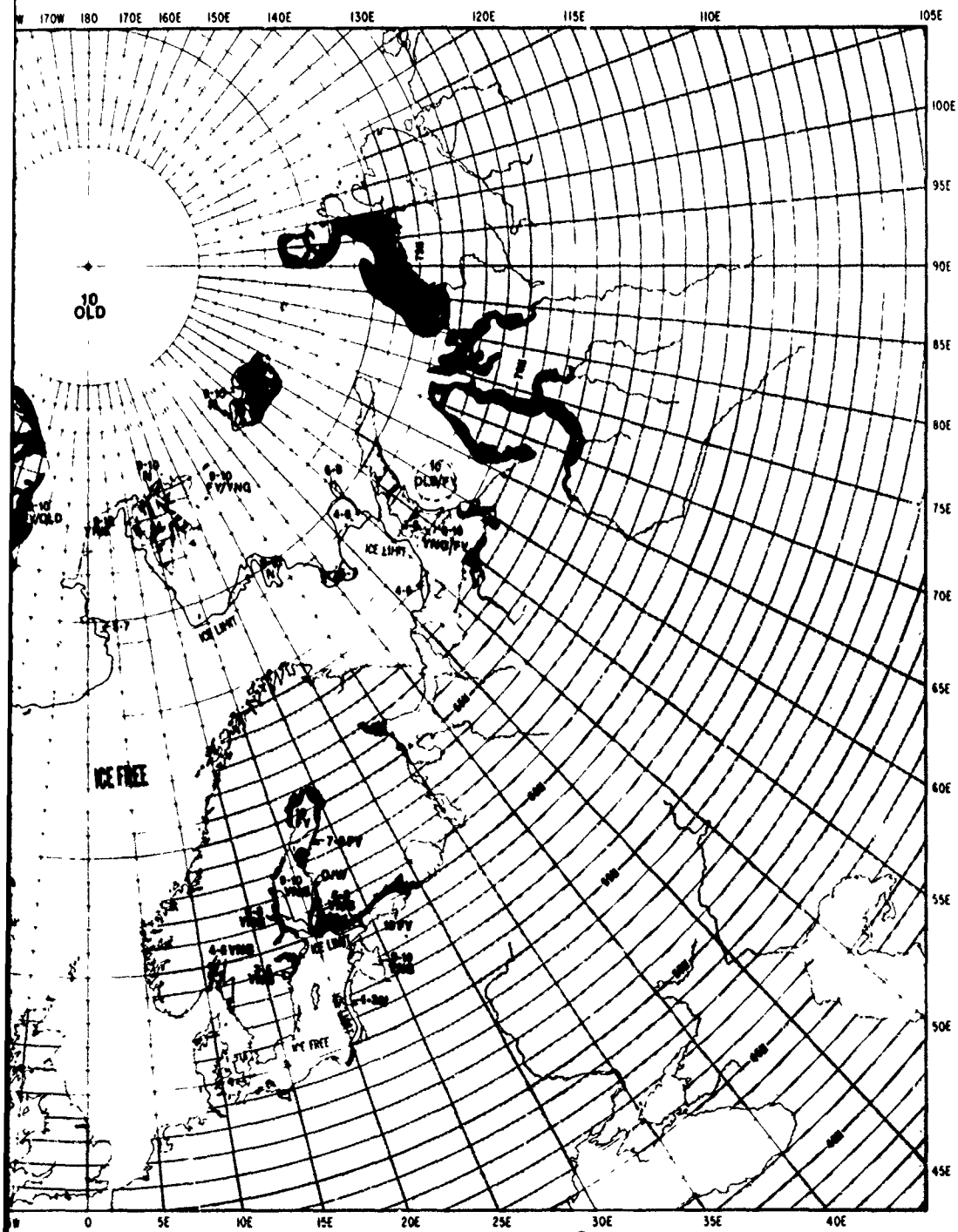
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
10 OLD
10FY
ICE FREE
ICE LIMIT
GREAT LAKES
SOUTHERN ICE LIMIT 11 MARCH 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
ICE CONCENTRATION
ICE THICKNESS/AGE



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65E
60E
55E
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5E
10E
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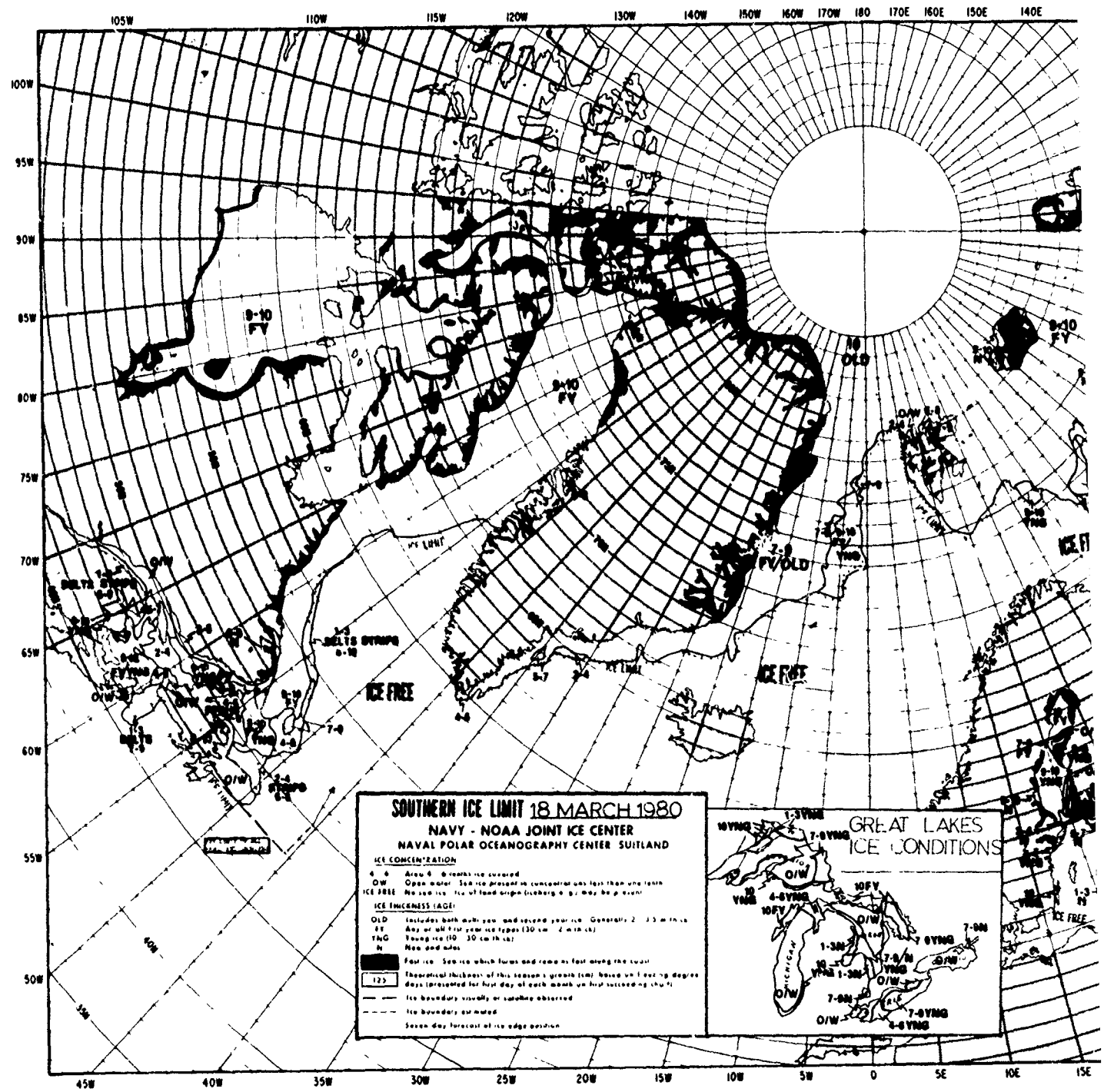
20E
25E
30E
35E
40E
10 OLD
ICE FREE
ICE LIMIT

2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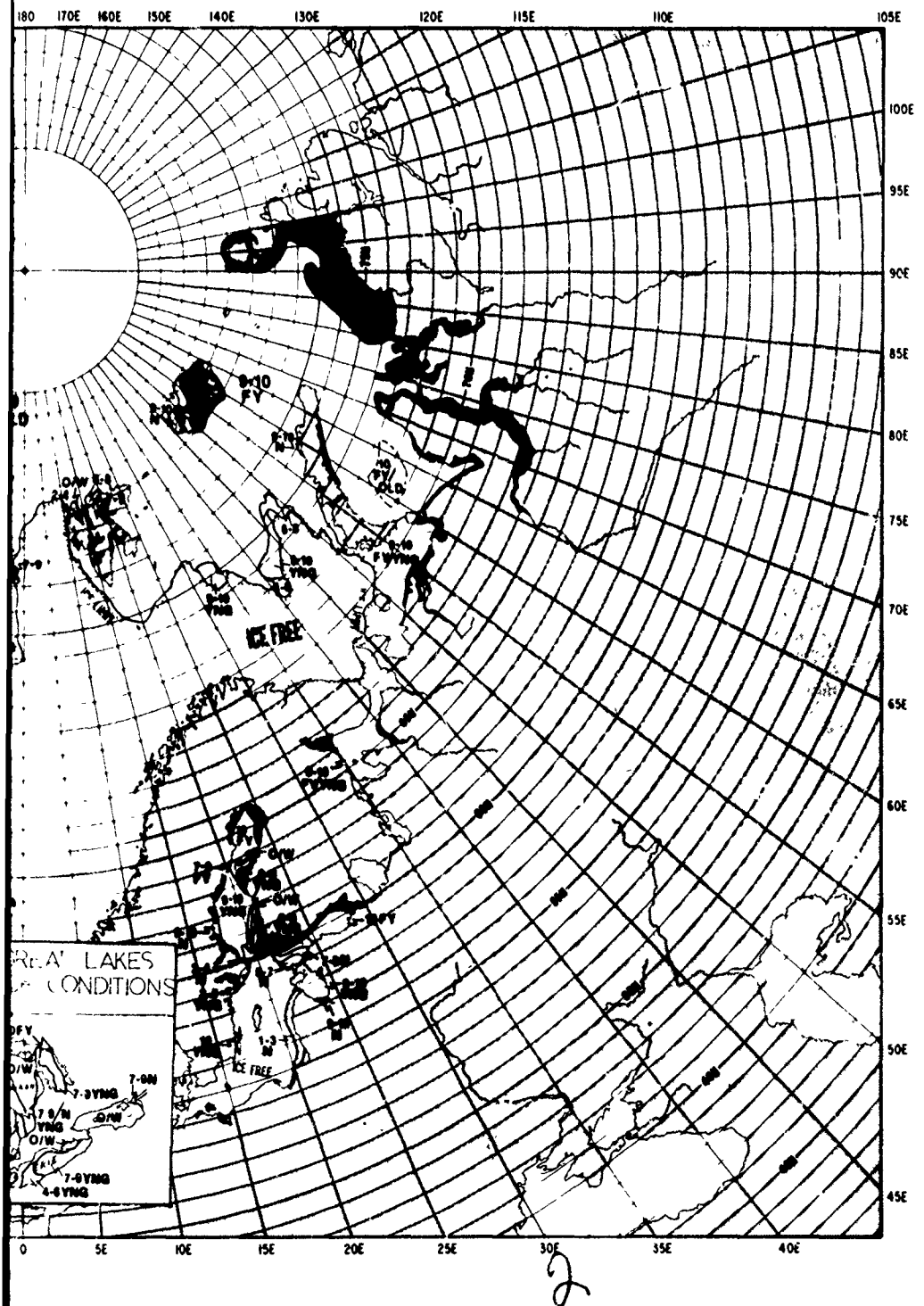
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
9-10 FV
OLD
FY/OLD
ICE FREE
ICE FREE
ICE LIMIT
SOUTHERN ICE LIMIT 18 MARCH 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
OLD
FY
YNG
N
Fast ice
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
GREAT LAKES
ICE CONDITIONS
O/W
ICE FREE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100E
95E
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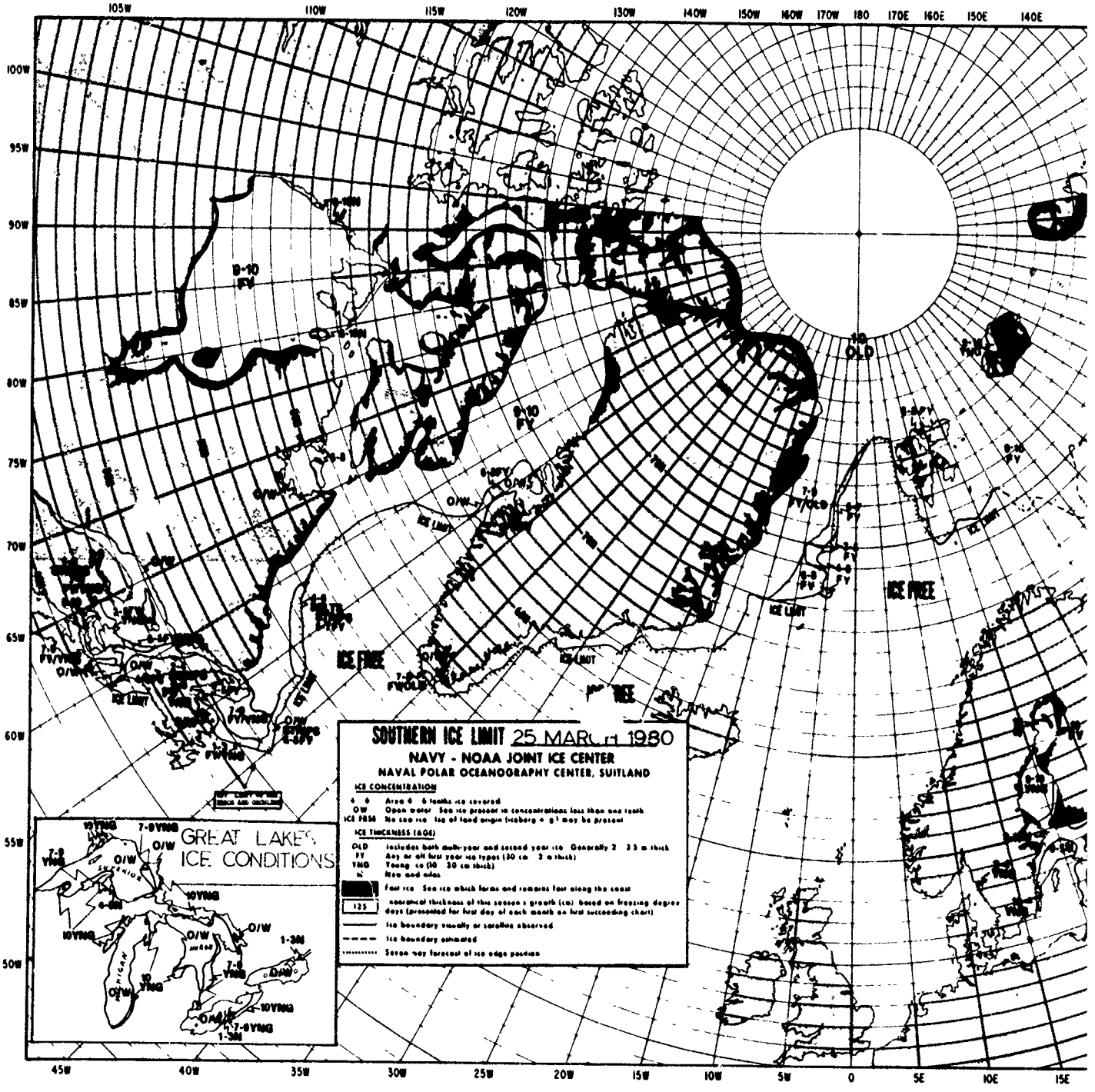
0 5E 10E 15E 20E 25E 30E 35E 40E
ICE FREE
LAKES
CONDITIONS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100W
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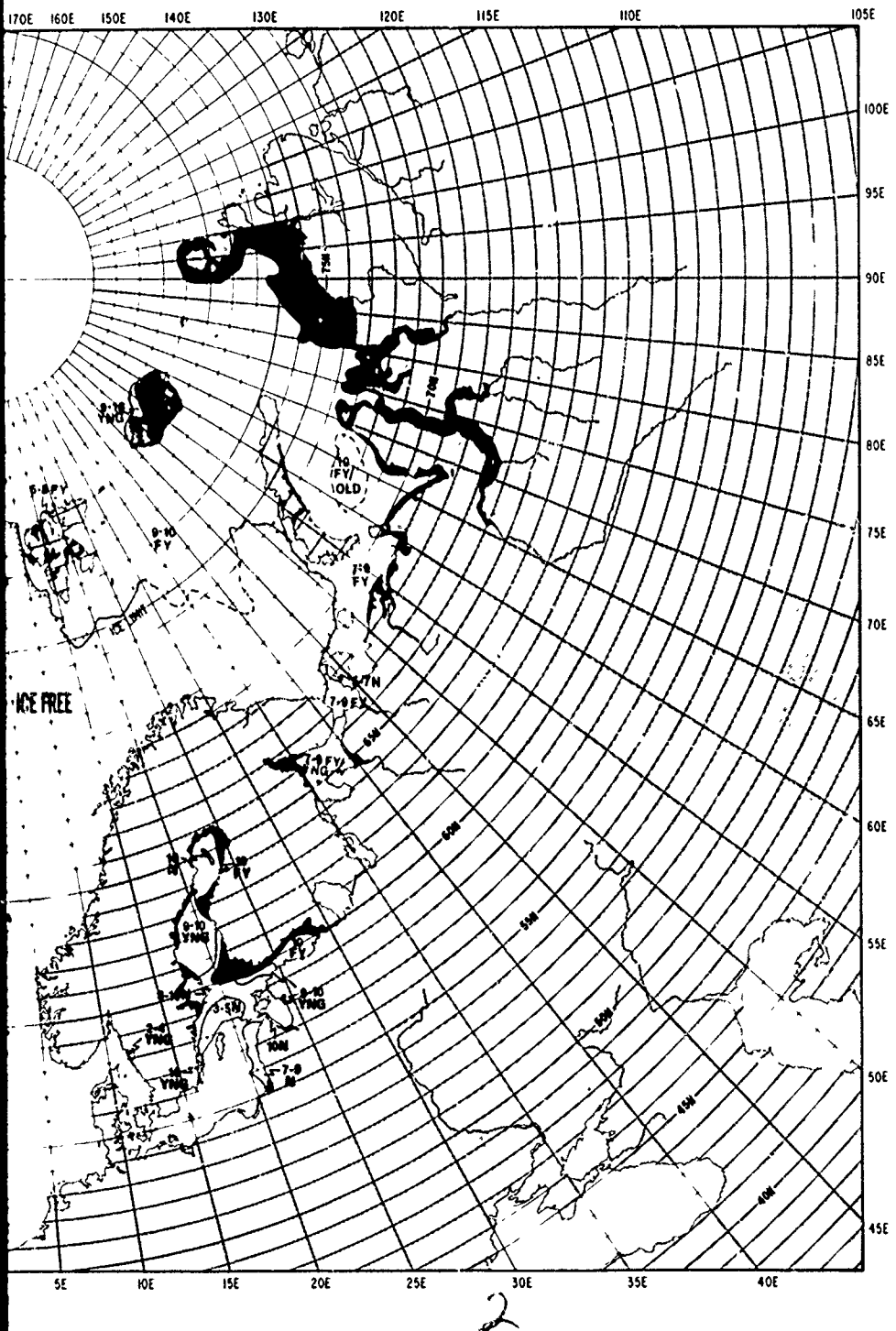
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
ICE FREE
ICE LIMIT
O/W
GREAT LAKES
ICE CONDITIONS
SOUTHERN ICE LIMIT 25 MARCH 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AOS)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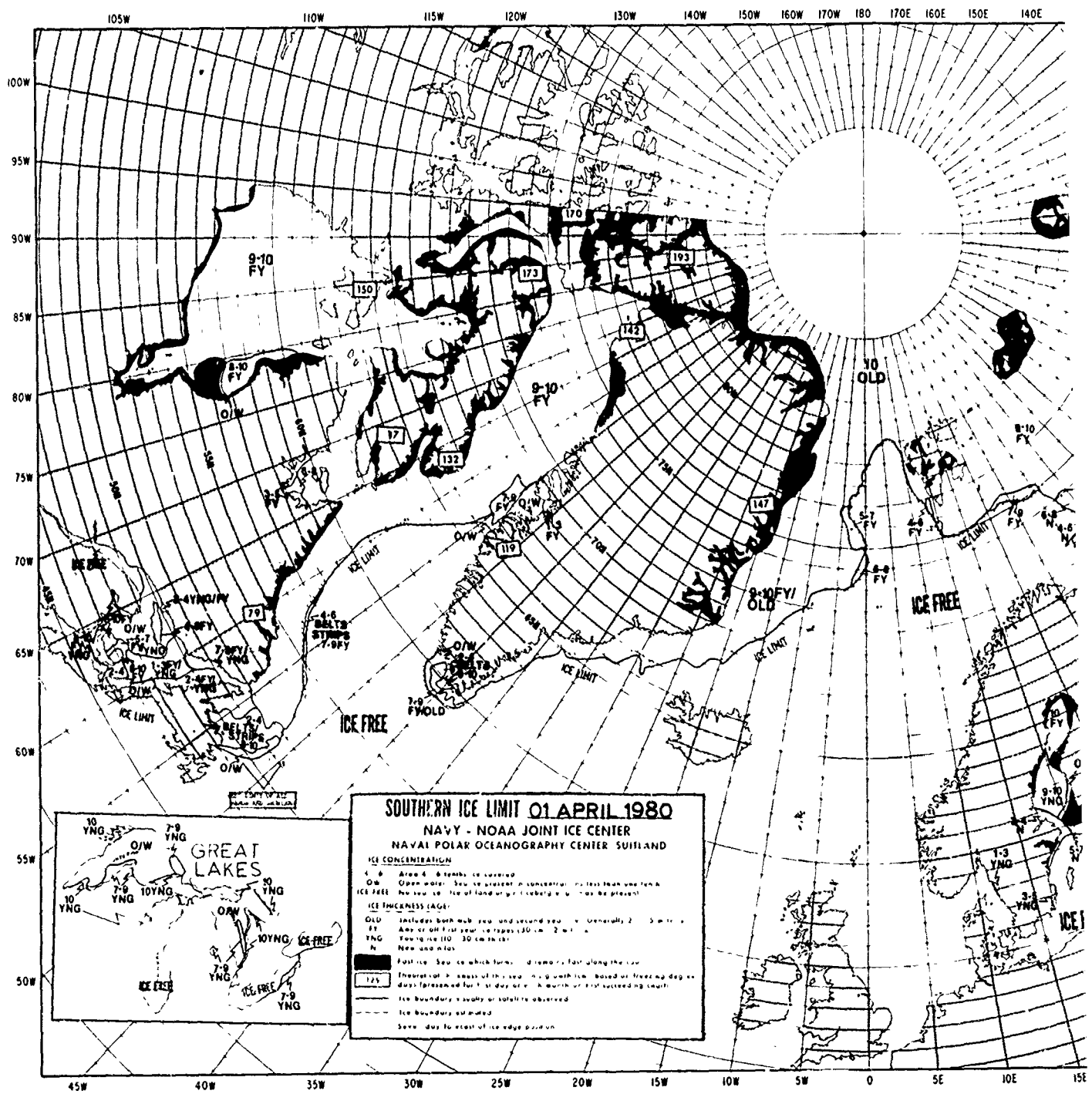
80E
75E
70E
65E
60E
55E
50E
45E
5E
10E
15E
20E
25E
30E
35E
40E
ICE FREE
10 FY/ OLD
9-10 FY
7-9 FY
9-10 YNG
3-5N
10N
7-9 N
75N
70N
65N
60N
55N
50N
45N
40N

2


SOUTHERN ICE LIMIT 01 APRIL 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
GREAT LAKES
ICE FREE
ICE LIMIT
9-10 FY
10 OLD
9-10FY/ OLD
BELTS STRIPS
O/W
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
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65W
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10W
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5E
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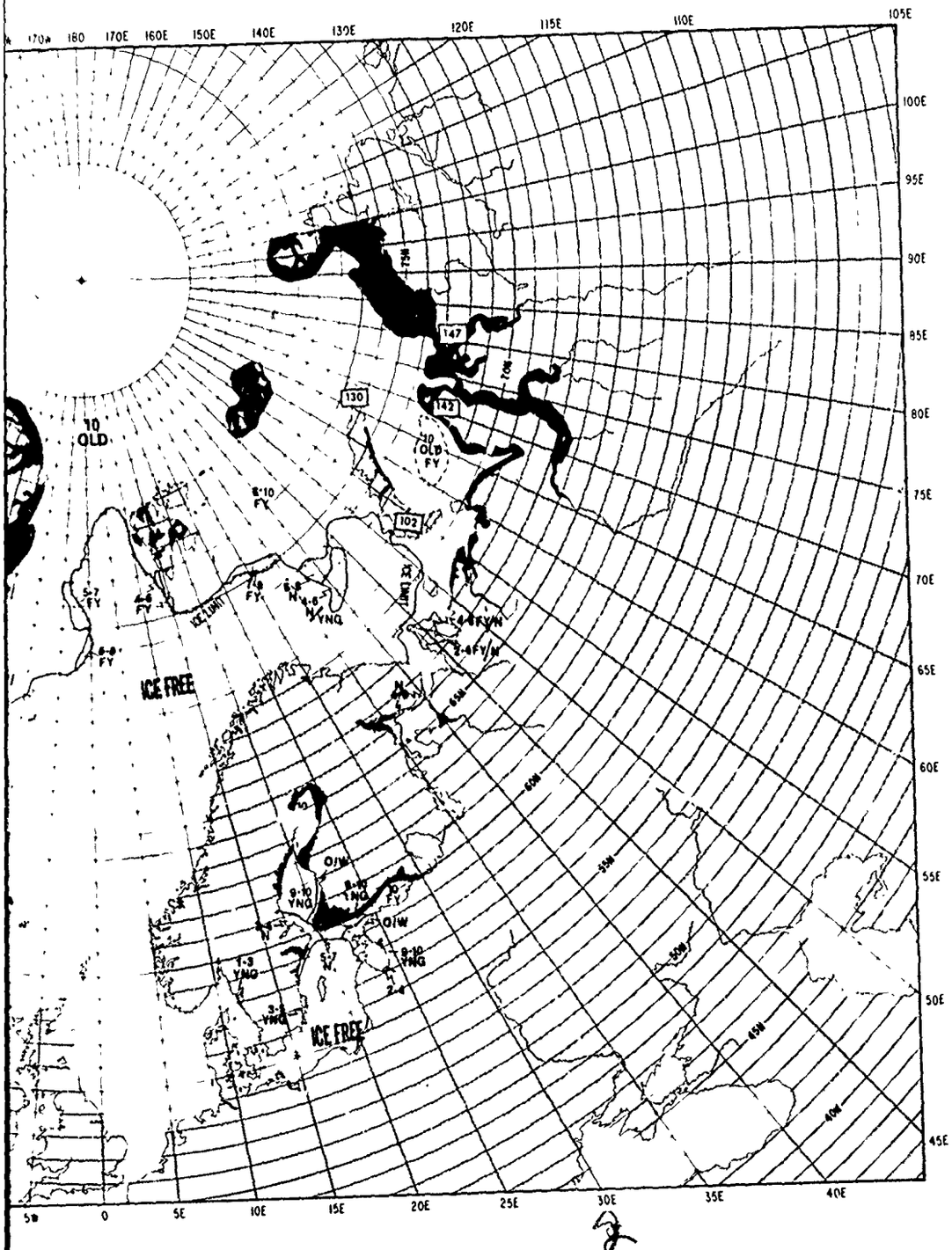
15E



170W
180
170E
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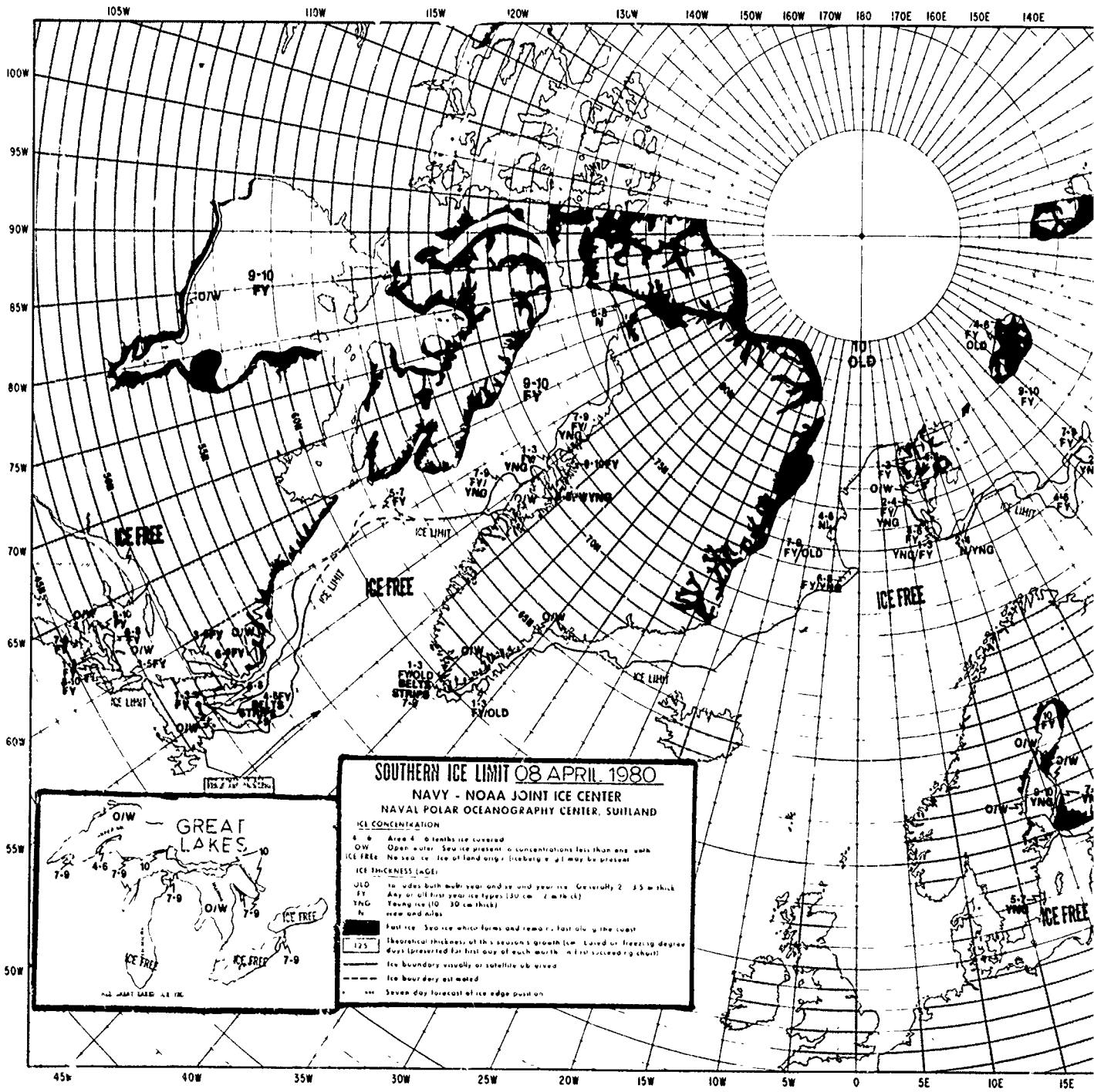
70E
65E
60E
55E
50E
45E
40E
35E
30E
25E
20E
15E
10E
5E
0
5W
10 OLD
ICE FREE
ICE LIMIT
147
130
142
102
10 OLD FY
8-10 FY
5-7 FY
4-6 FY
6-8 FY
7-8 FY
6-8 N
4-6 N/YNG
4-6FY/N
2-4FY/N
O/W
9-10 YNG
8-10 YNG
10 FY
1-3 YNG
3-5 YNG
2-4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130W
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140E
100W
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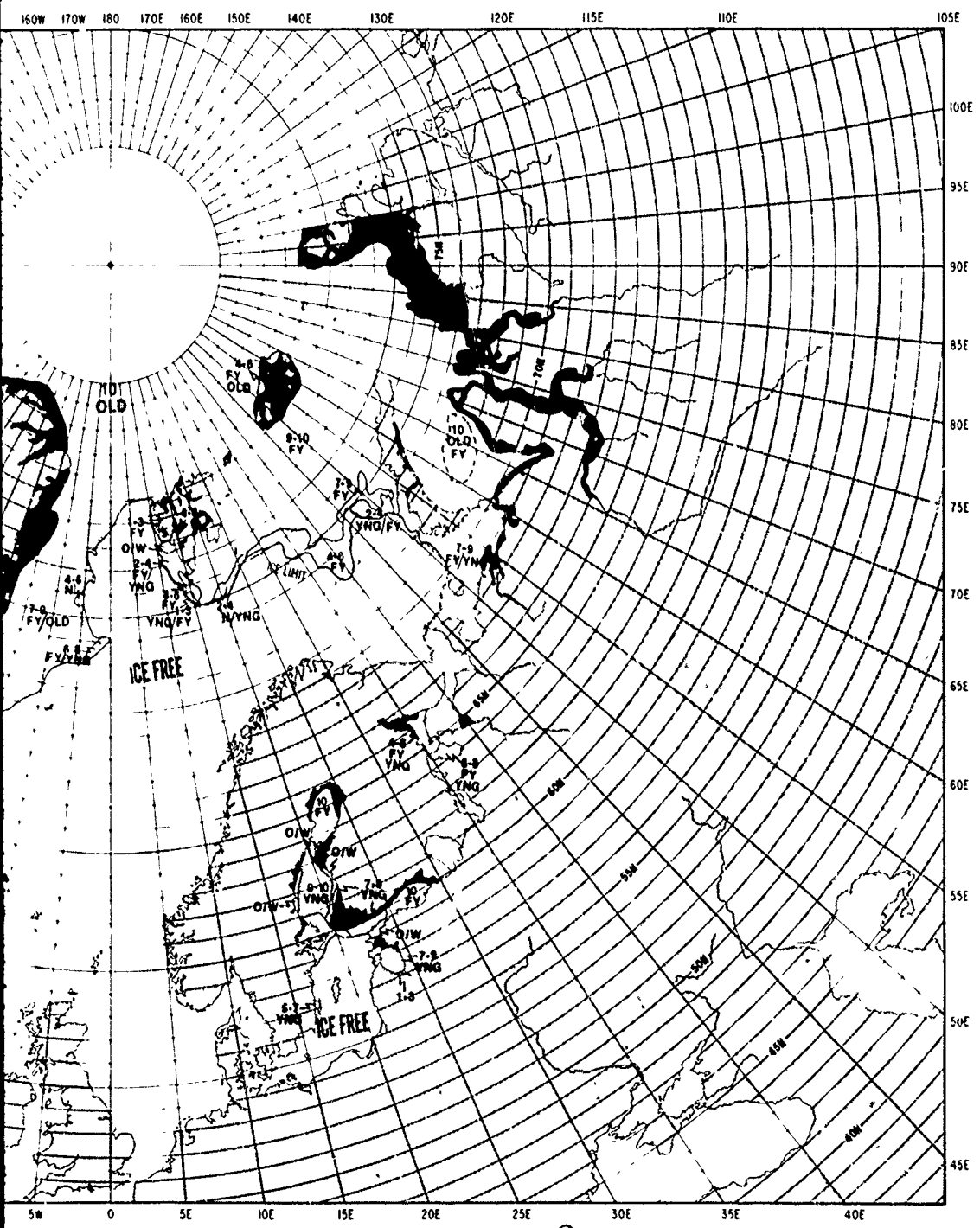
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
ICE FREE
ICE LIMIT
9-10 FY
O/W
GREAT LAKES
SOUTHERN ICE LIMIT 08 APRIL 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
Fast ice
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position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100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
5W 0 5E 10E 15E 20E 25E 30E 35E 40E
ICE FREE
ICE FREE
10 OLD
10 OLD FY
9-10 FY
7-9 FY
2-4 YNG/FY
7-9 FY/YNG
4-6 FY
4-6 FY OLD
1-3 FY
O/W
2-4 FY/YNG
3-6 FY
1-3 YNG/FY
2-4 N/YNG
4-6 N
7-9 FY/OLD
6-8 FY/YNG
4-6 FY YNG
6-8 FY YNG
10 FY
O/W
9-10 YNG
7-9 YNG
10 FY
O/W
7-9 YNG
1-3
6-7 YNG
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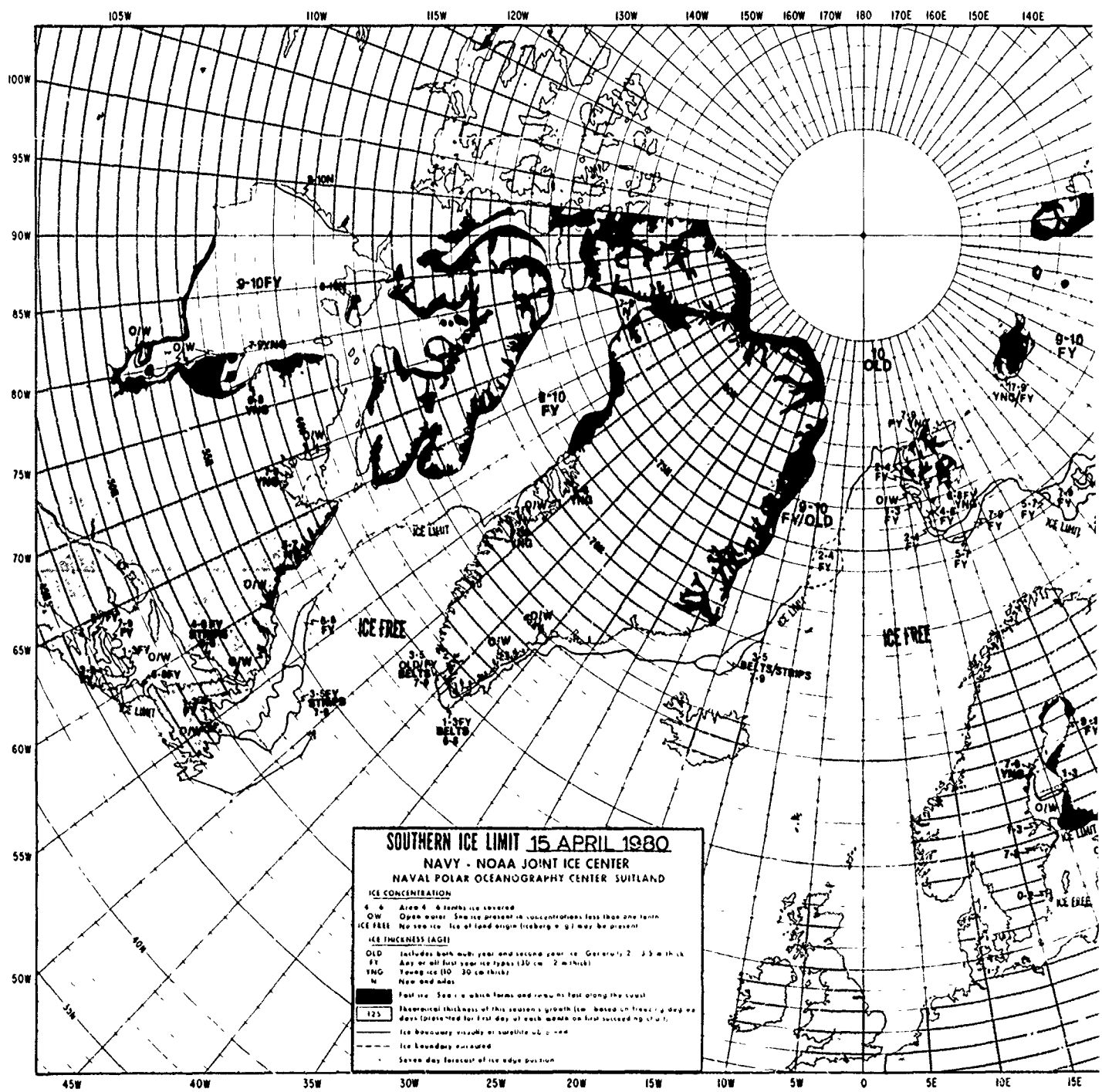
70N
65N
60N
55N
50N
45N
40N

2


105W
110W
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120W
130W
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150W
160W
170W
180
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150E
140E
100W
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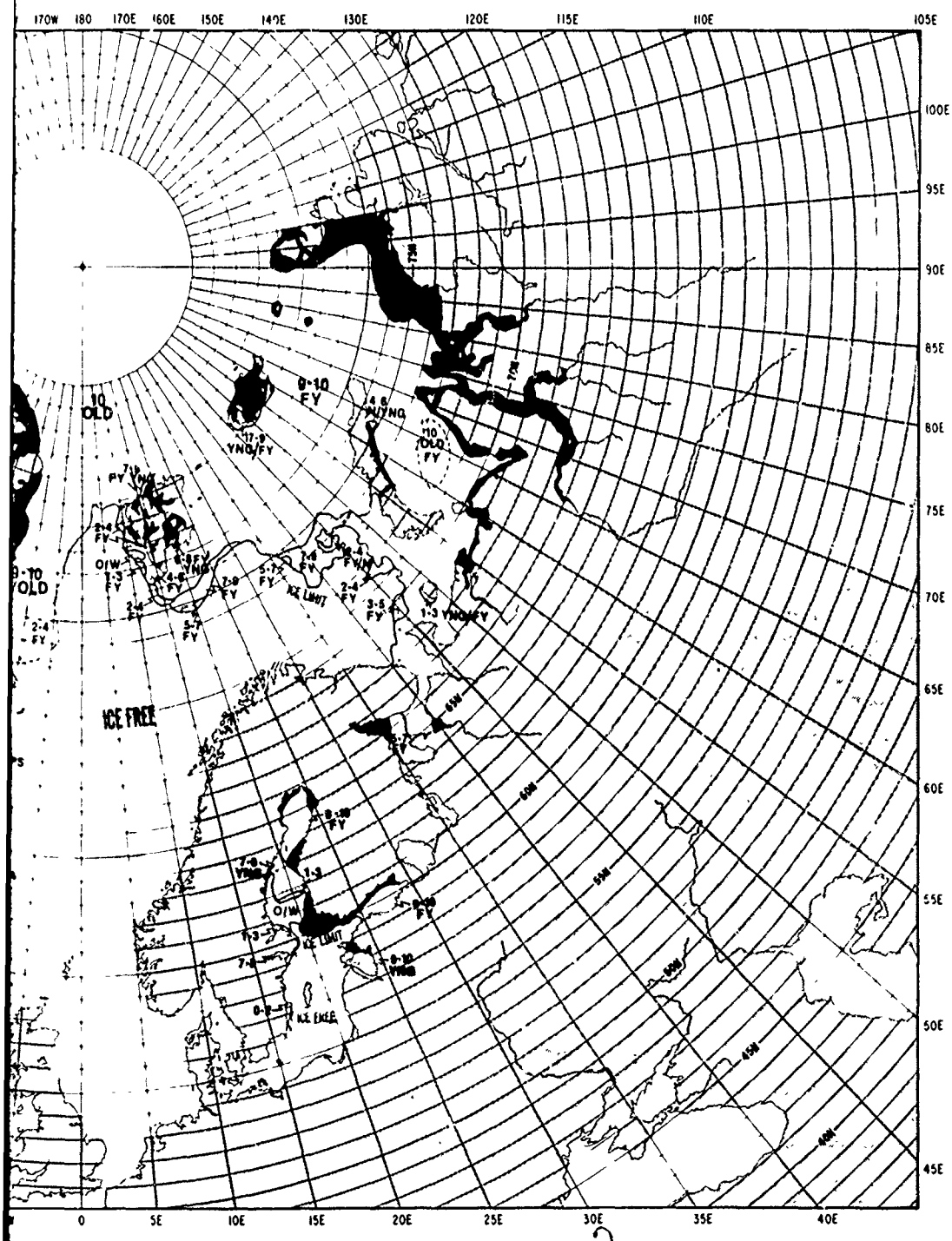
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
9-10FY
9-10 FY
10 OLD
9-10 FY/OLD
ICE FREE
ICE LIMIT
SOUTHERN ICE LIMIT 15 APRIL 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
OLD
FY
YNG
N
O/W


170W
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120E
115E
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105E
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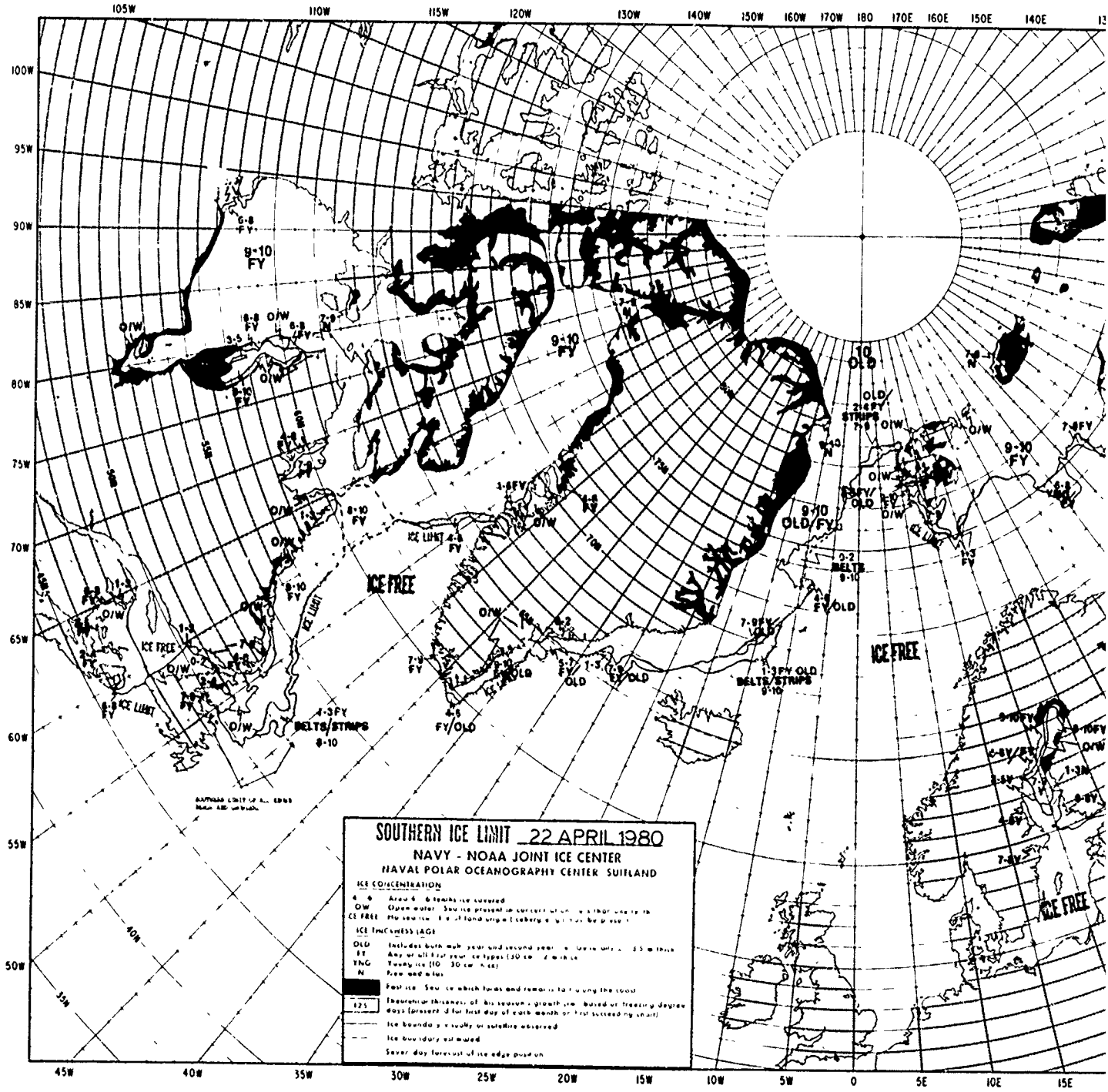
75E
70E
65E
60E
55E
50E
45E
0
5E
10E
15E
20E
25E
30E
35E
40E
ICE FREE
ICE LIMIT
9-10 FY
10 OLD
17-9 YNG/FY
4-6 M/YNG
10 OLD FY
1-3 YNG/FY
O/W
ICE FREE

2


SOUTHERN ICE LIMIT 22 APRIL 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
ICE FREE
ICE LIMIT
9-10 FY
9-10 OLD/FY
BELTS/STRIPS
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
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40W
35W
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20W
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10W
5W
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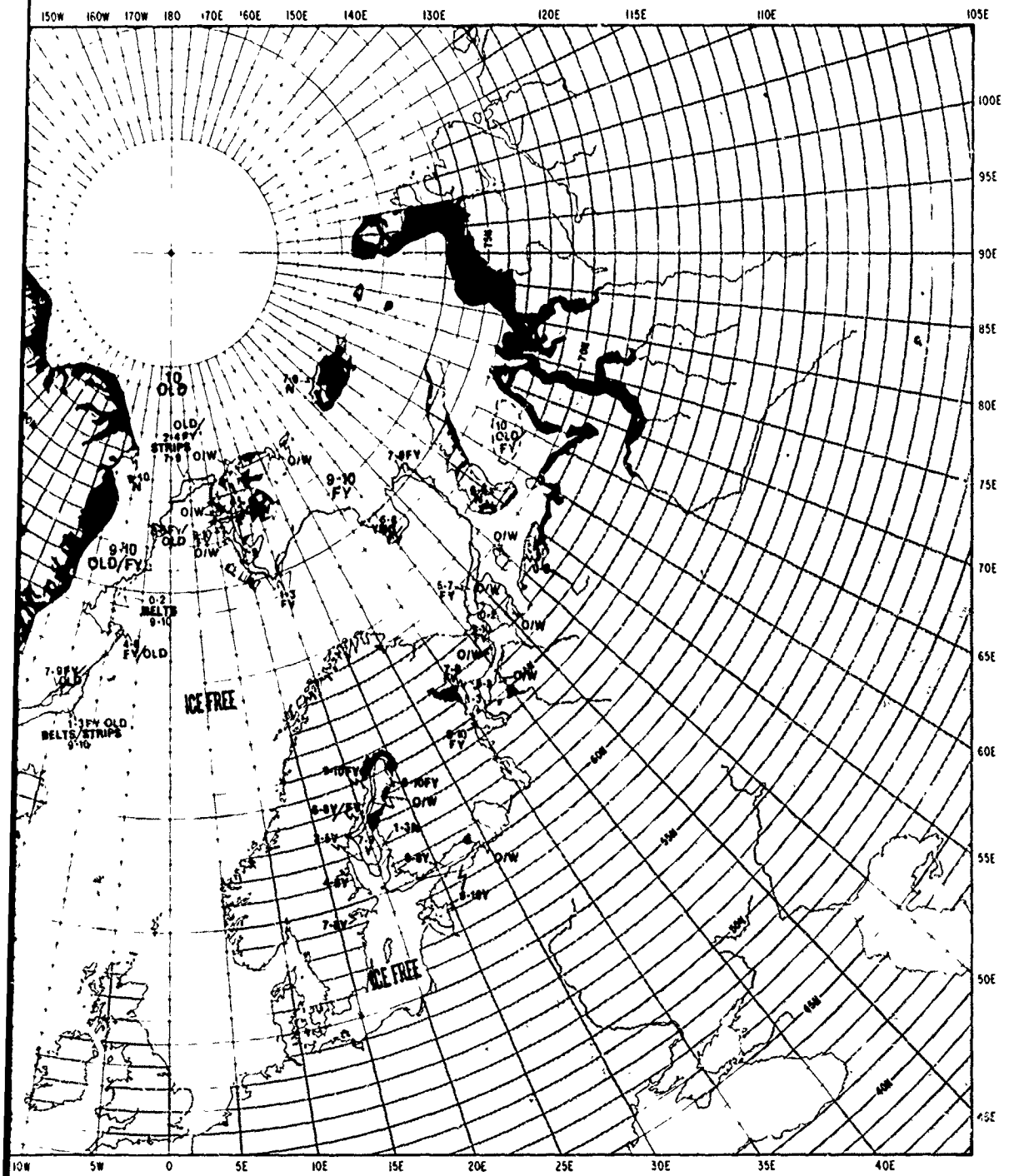
5E
10E
15E


150W
160W
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120E
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80E
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10W
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0
5E
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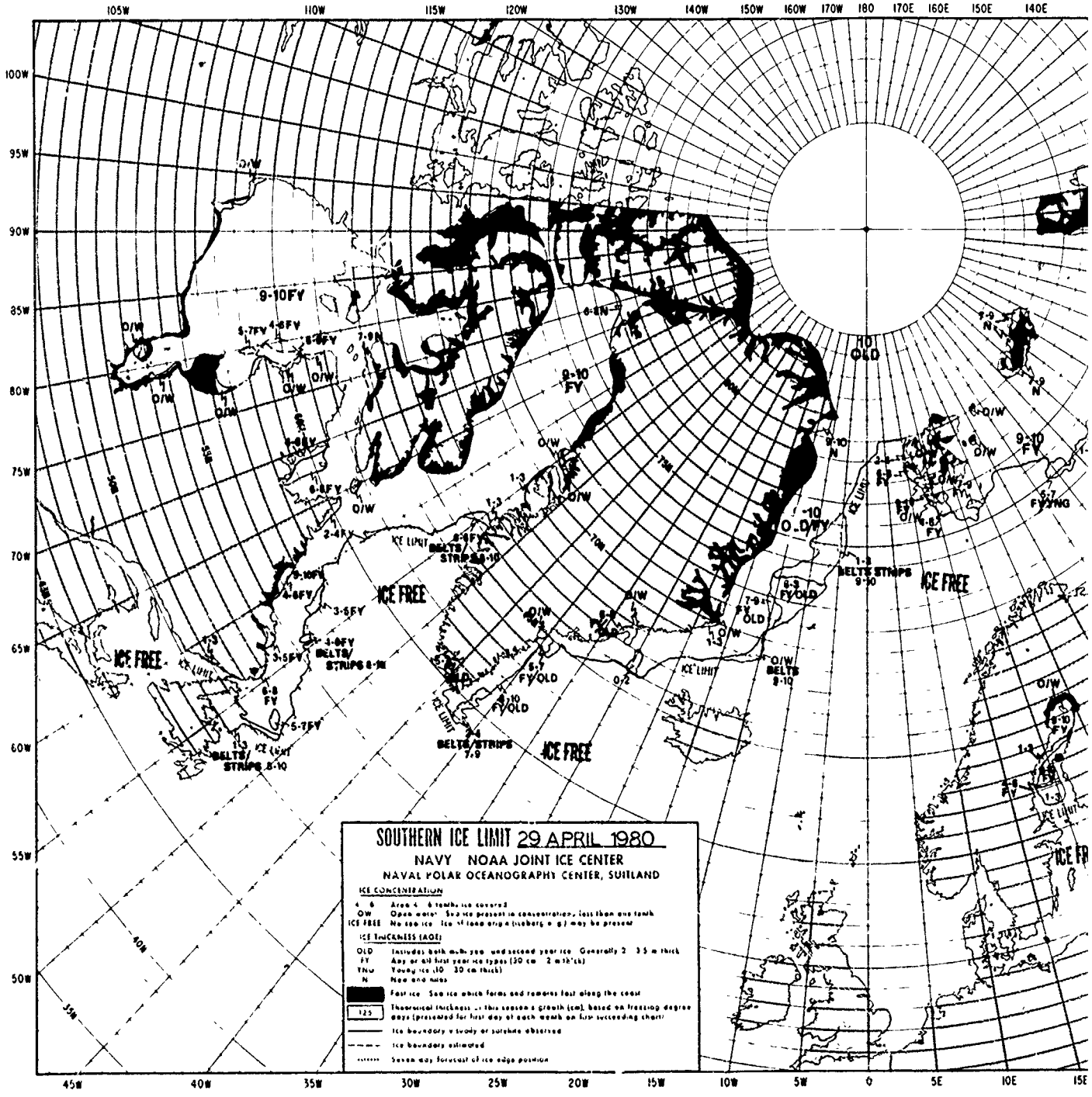
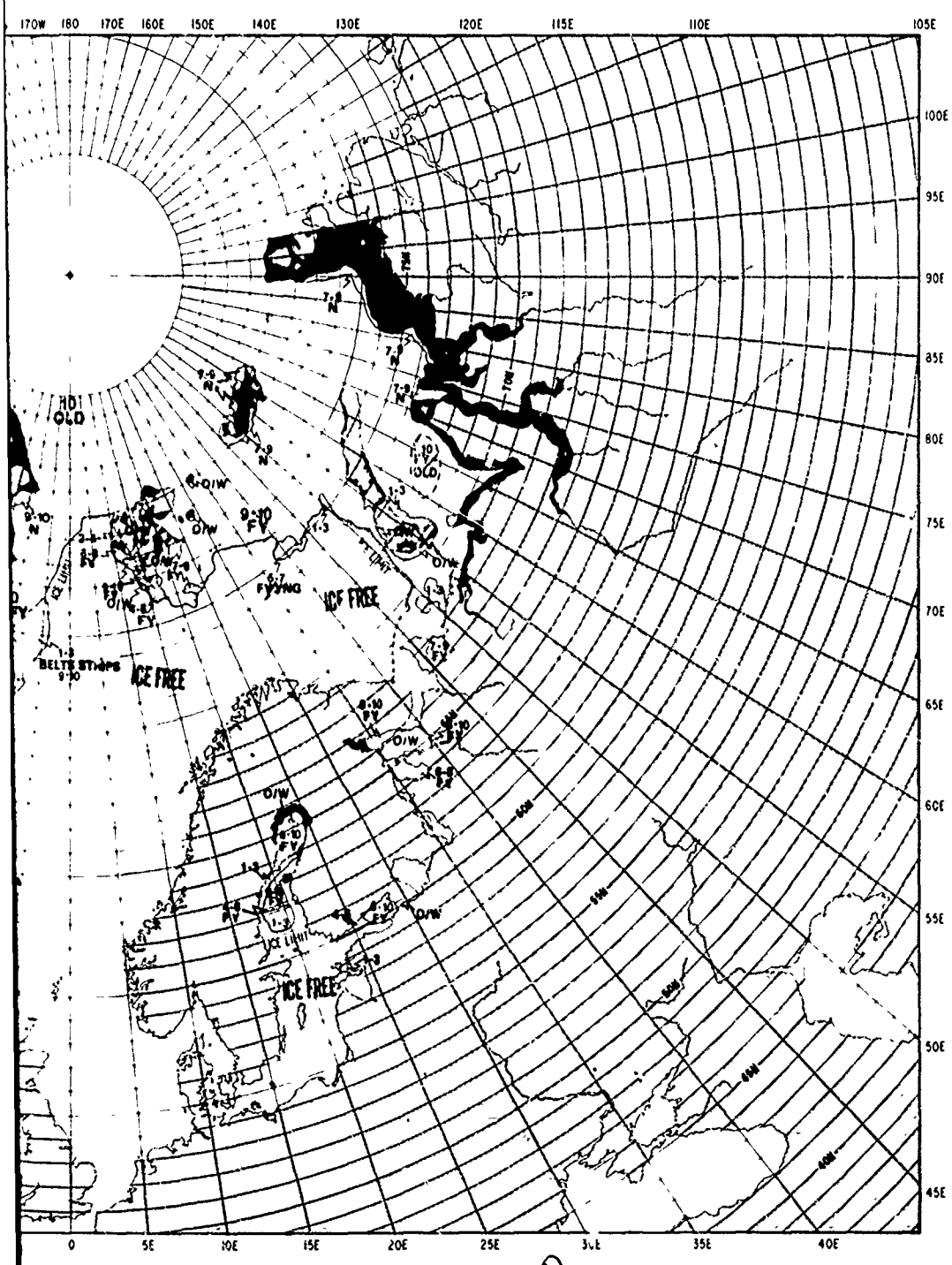
15E
20E
25E
30E
35E
40E
10 OLD
OLD/ 2-4FY STRIPS 7-9
O/W
9-10 FY
9-10 OLD/FY
0-2 BELTS 9-10
4-8 FY/OLD
7-9FY OLD
1-3FY OLD BELTS/STRIPS 9-10
ICE FREE
ICE FREE
10 OLD FY
7-8FY
5-7 FY
9-10FY
6-8Y/FY
1-3N
7-8Y
8-10Y
60N
55N
50N
45N
40N

2


SOUTHERN ICE LIMIT 29 APRIL 1980
NAVY NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentration, less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3.5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm), based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
ICE FREE
ICE LIMIT
9-10FY
9-10 FY
10 OLD
9-10 OLD/FY
BELTS/STRIPS 8-10
BELTS/STRIPS 7-9
BELTS STRIPS 9-10
O/W
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E


170W
180
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115E
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105E
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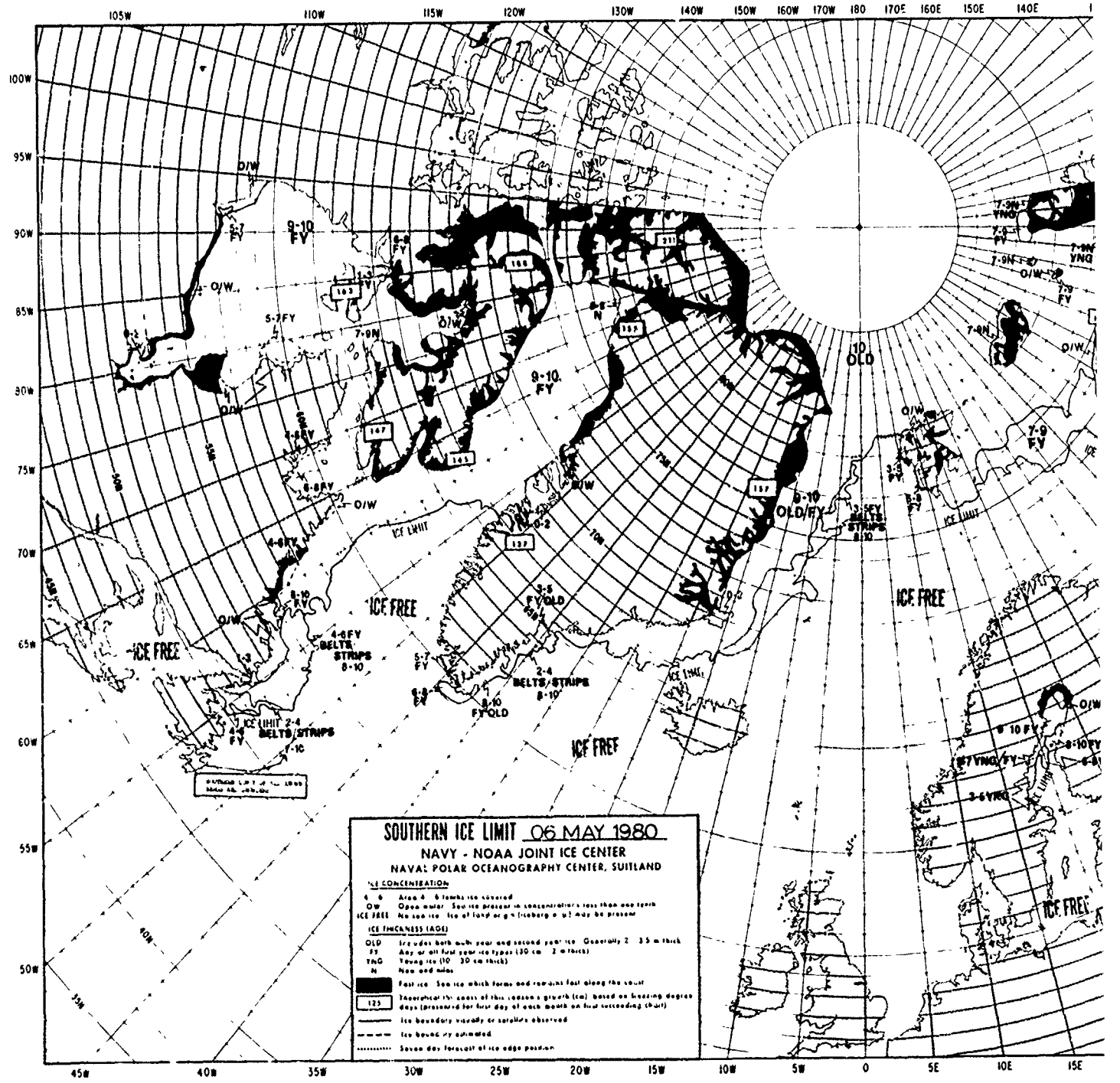
85E
80E
75E
70E
65E
60E
55E
50E
45E
0
5E
10E
15E
20E
25E
30E
35E
40E
ICE FREE
ICE FREE
ICE FREE
BELTS STRIPS
O/W
FY
FYYNG
OLD
ICE LIMIT

2


SOUTHERN ICE LIMIT 06 MAY 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 - 6 Area 4 - 6 tenths ice covered
OW Open water. Sea ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (iceberg e.g.) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice. Generally 2 - 3.5 m thick
FY Any or all first year ice types (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
ICE FREE
ICE LIMIT
9-10 FY
10 OLD
9-10 OLD/FY
7-9 FY
7-9N
7-9N YNG
5-7 FY
6-8 FY
4-6 FY
8-10 FY
3-5 FY/OLD
2-4 BELTS/STRIPS 8-10
4-6 FY BELTS STRIPS 8-10
8-10 FY/OLD
3-5 FY BELTS STRIPS 8-10
9-10 FY
7 YNG/FY
3-5 YNG
O/W
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
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35W
30W
25W
20W
15W
10W
5W
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5E
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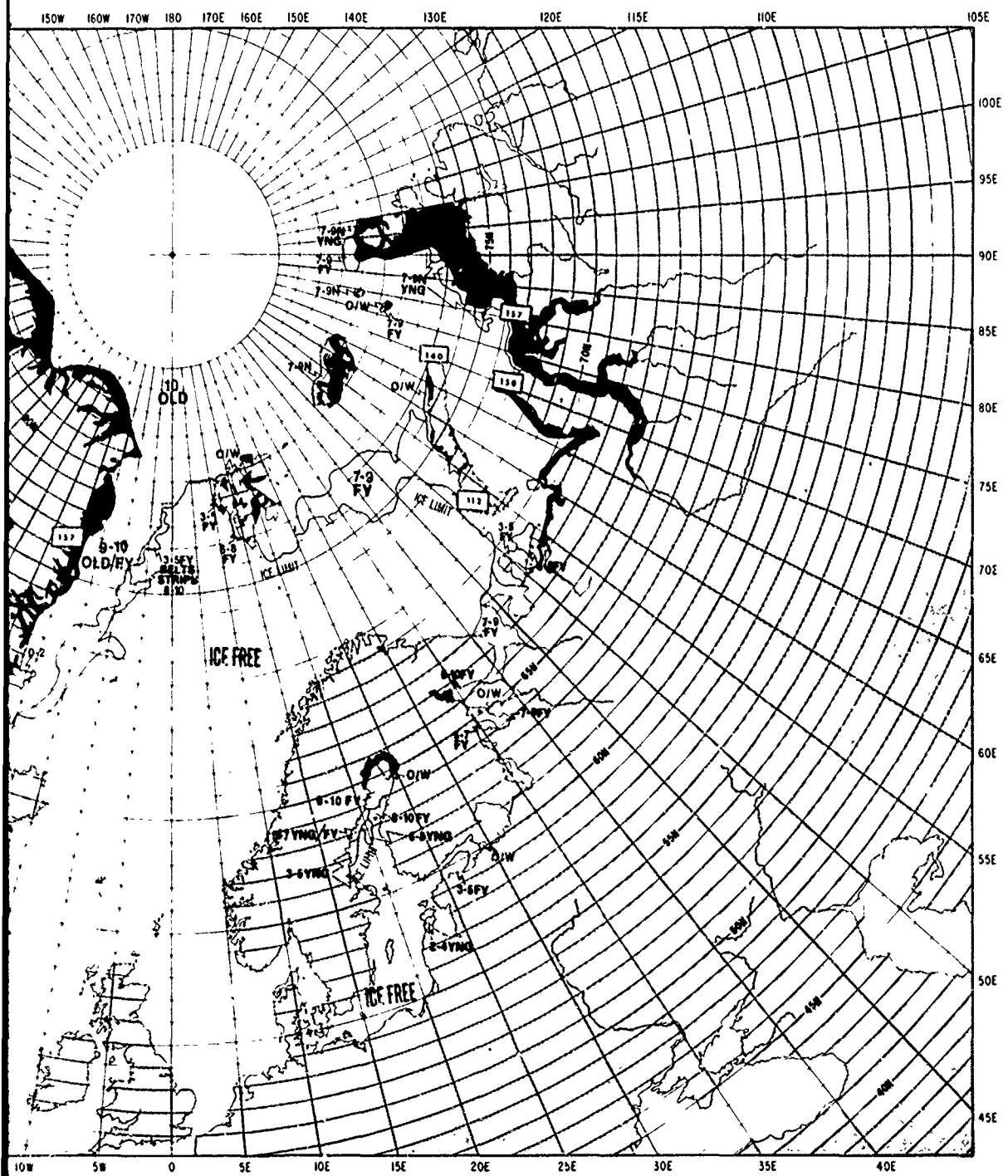
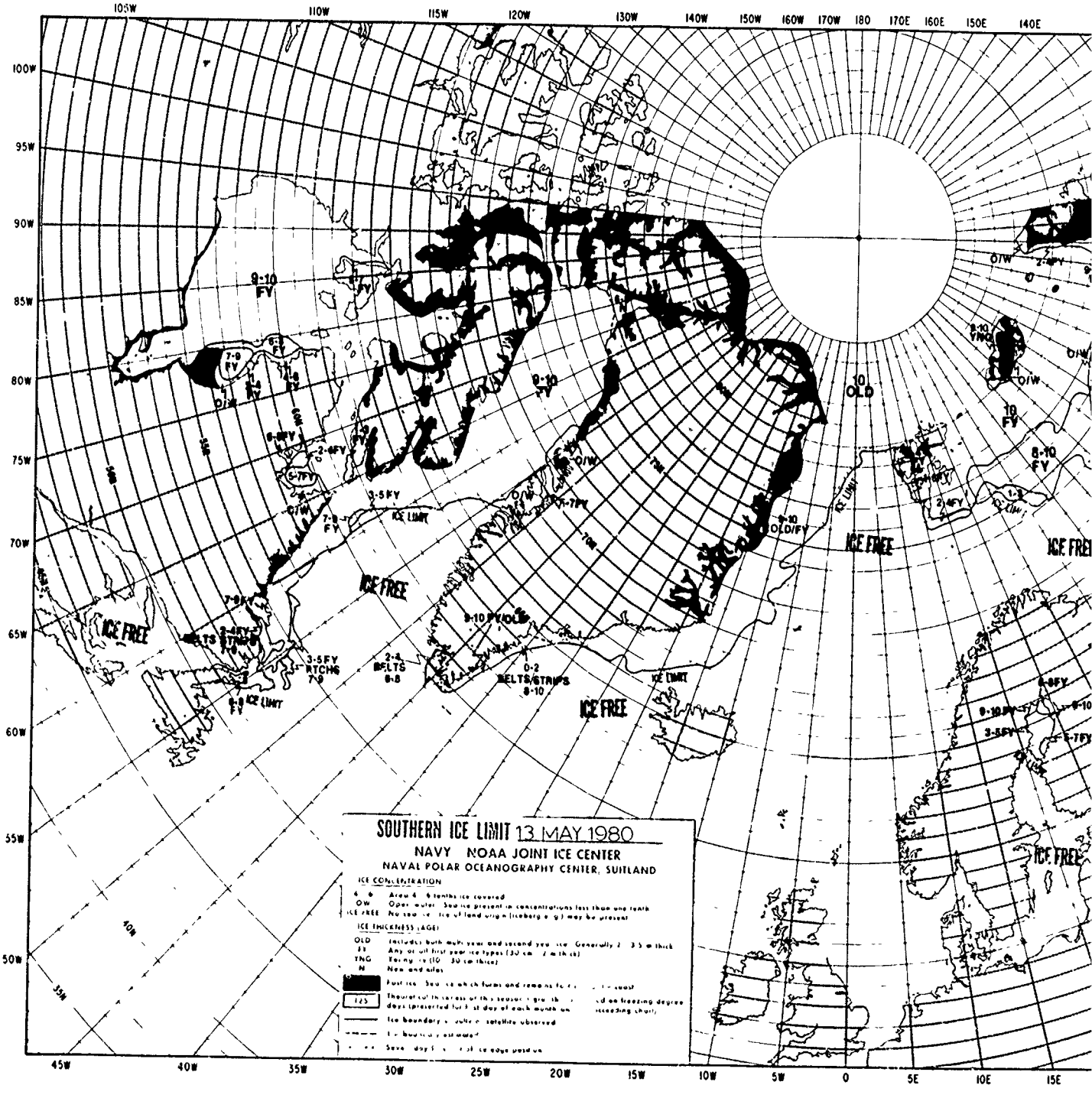
15E


150W 160W 170W 180 170E 160E 150E 140E 130E 120E 115E 110E 105E
100E 95E 90E 85E 80E 75E 70E 65E 60E 55E 50E 45E
10W 5W 0 5E 10E 15E 20E 25E 30E 35E 40E
ICE FREE
ICE FREE
ICE LIMIT
ICE LIMIT
OLD
7-9 FY
7-9 FY
7-9 FY


SOUTHERN ICE LIMIT 13 MAY 1980
NAVY NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
ICE FREE
ICE LIMIT
9-10 FY
10 OLD
10 FY
8-10 FY
3-5 FY
3-5 FY RTCHG 7-9
2-4 BELTS 6-8
0-2 BELTS/STRIPS 8-10
9-10 FY/OLD
9-10 OLD/FY
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
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10W
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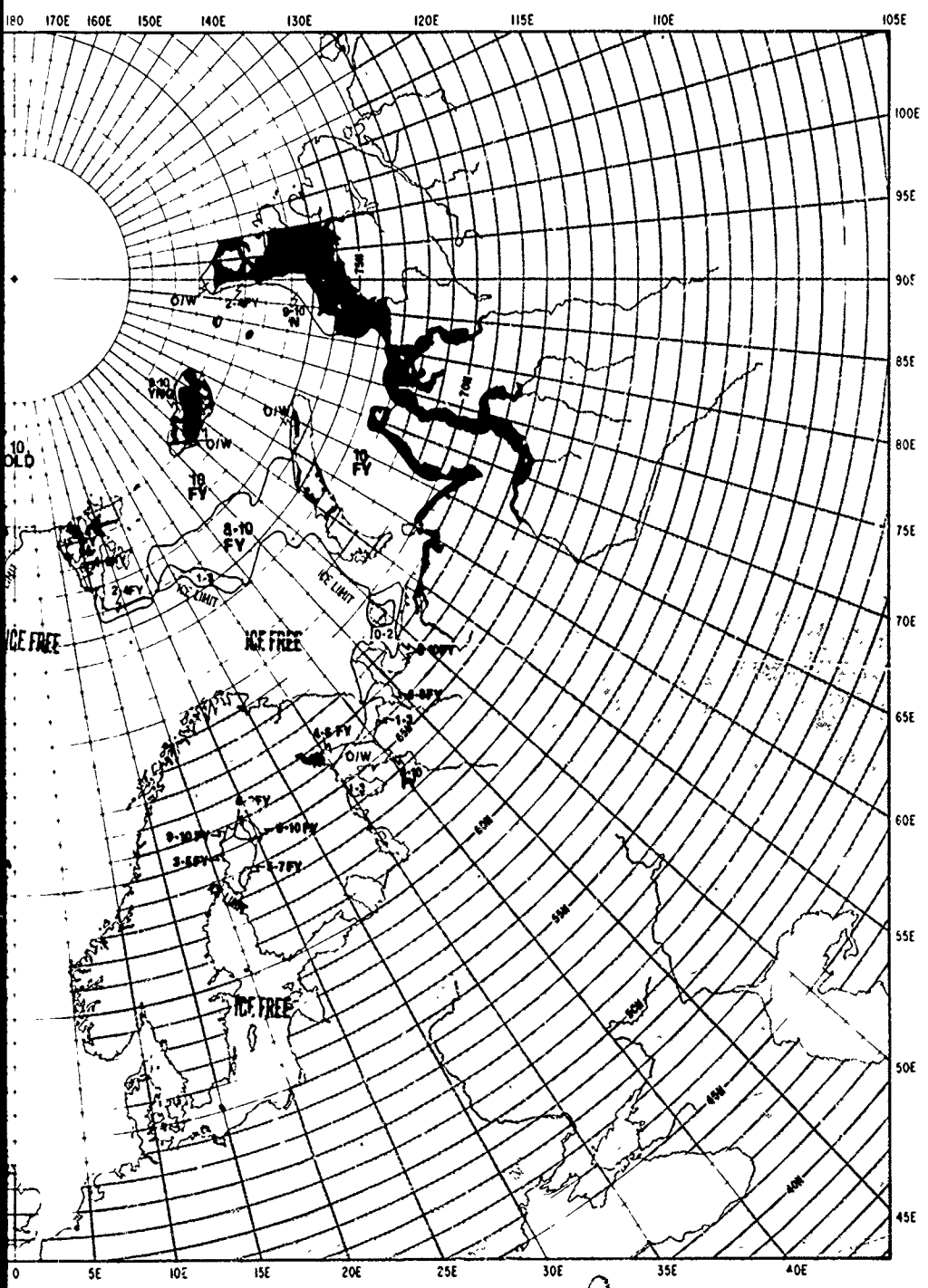
15E



180
170E
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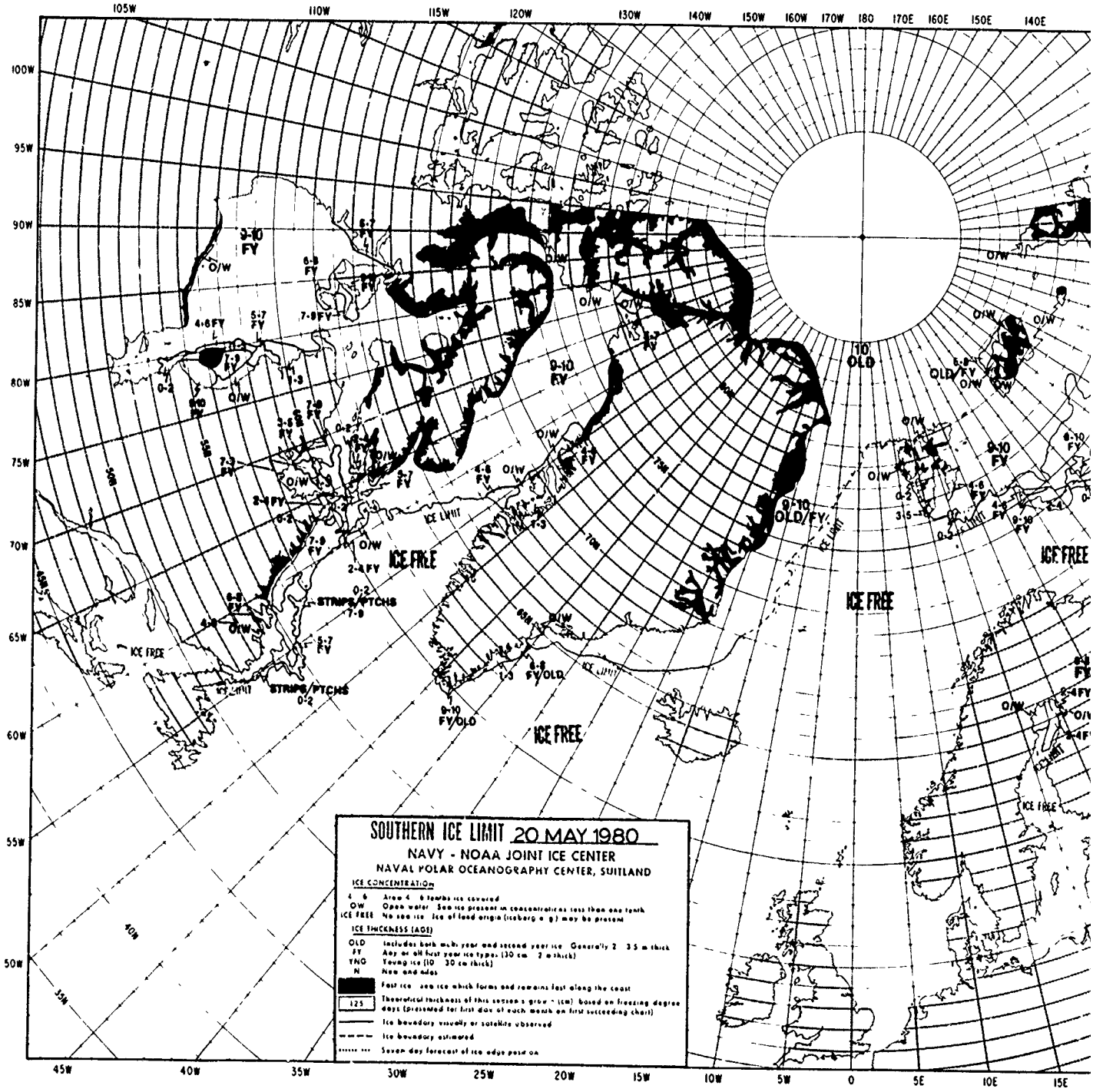
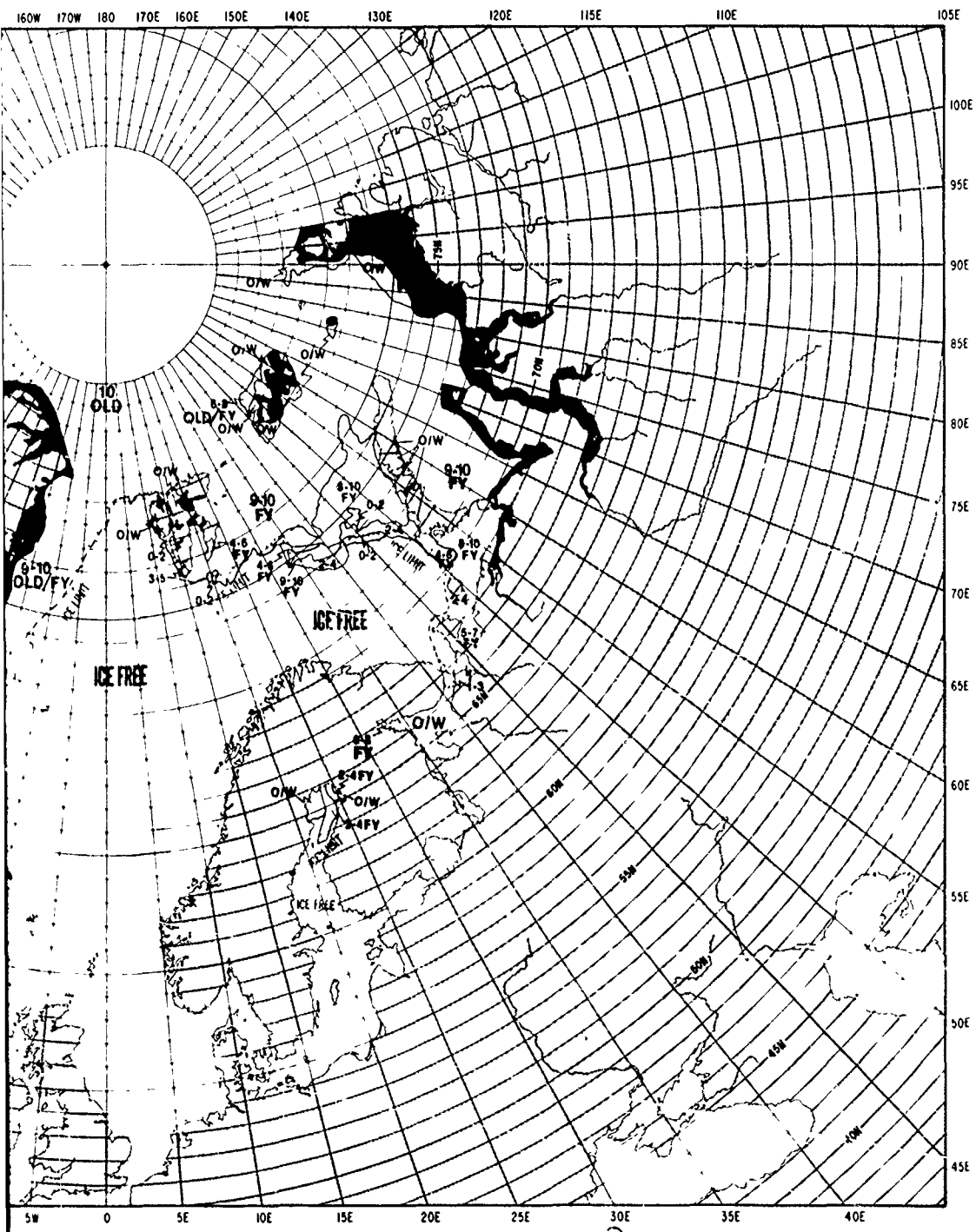
20E
25E
30E
35E
40E
ICE FREE
ICE LIMIT
10 FY
8-10 FY
O/W

2


105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
ICE FREE
ICE LIMIT
SOUTHERN ICE LIMIT 20 MAY 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
OW Open water
ICE FREE No sea ice
ICE THICKNESS (AGE)
OLD
FY
YNG
N
Fast ice
Ice boundary visually or satellite observed
Ice boundary estimated


160W 170W 180 170E 160E 150E 140E 130E 120E 115E 110E 105E
100E
95E
90E
85E
80E
75E
70E
65E
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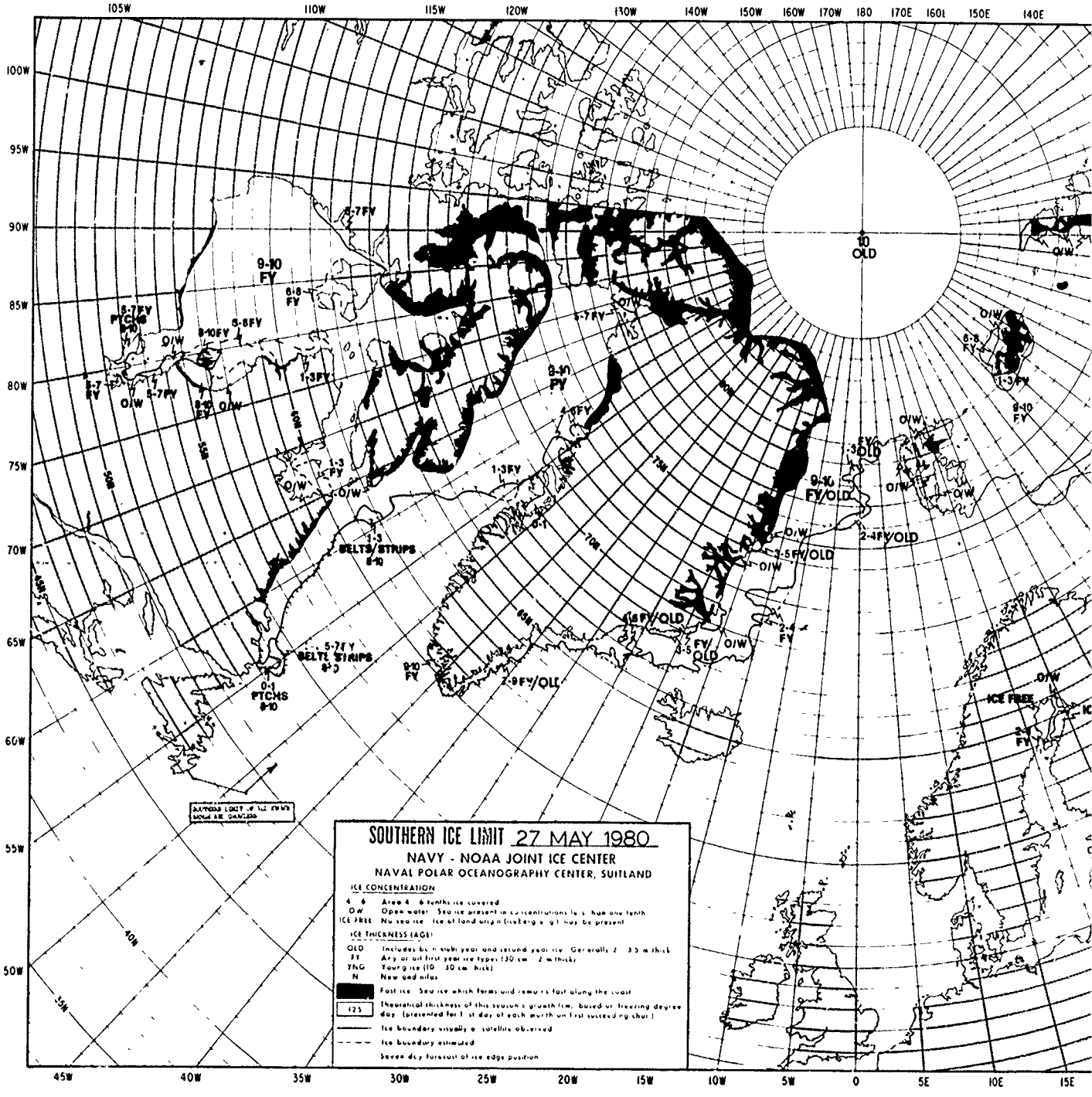
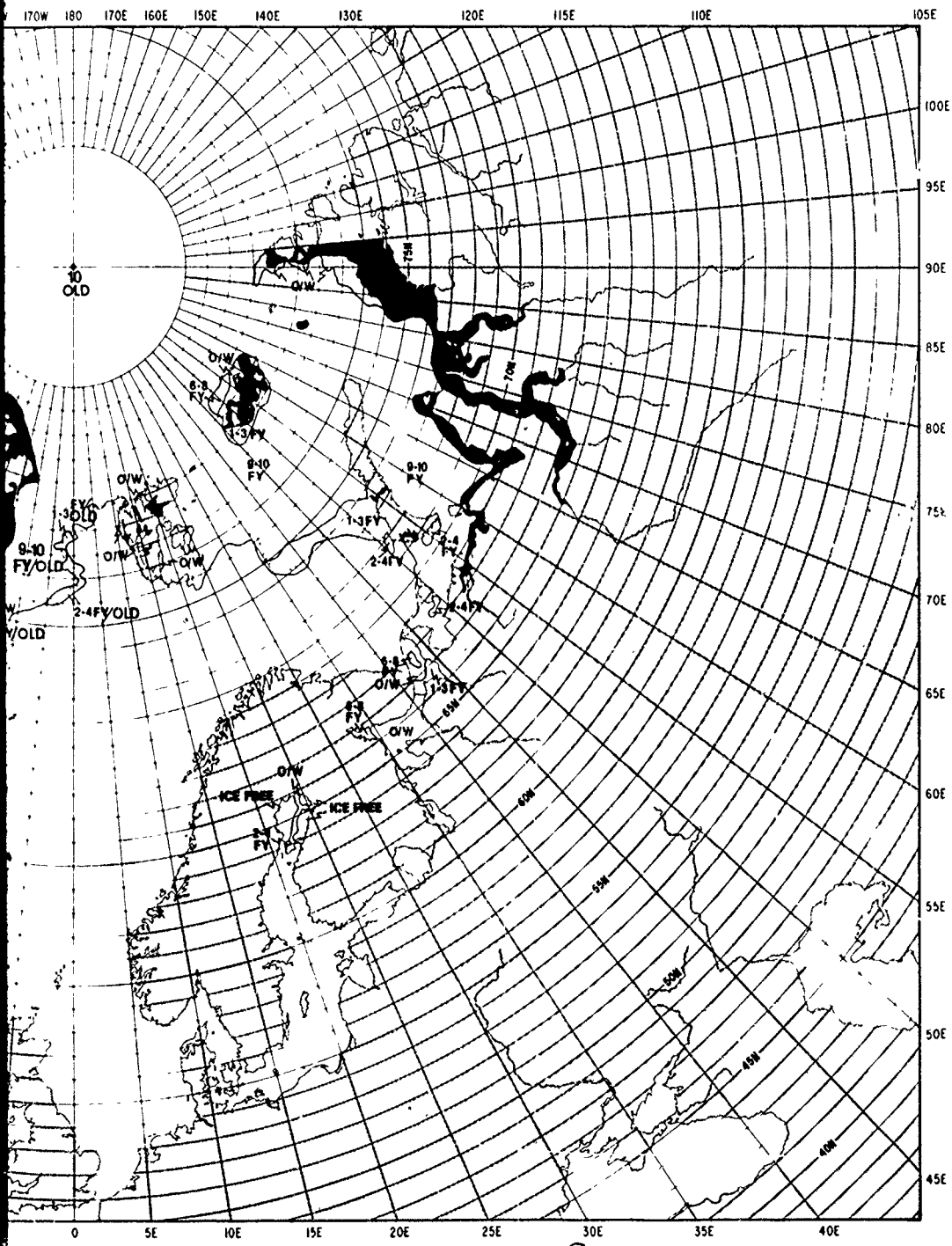
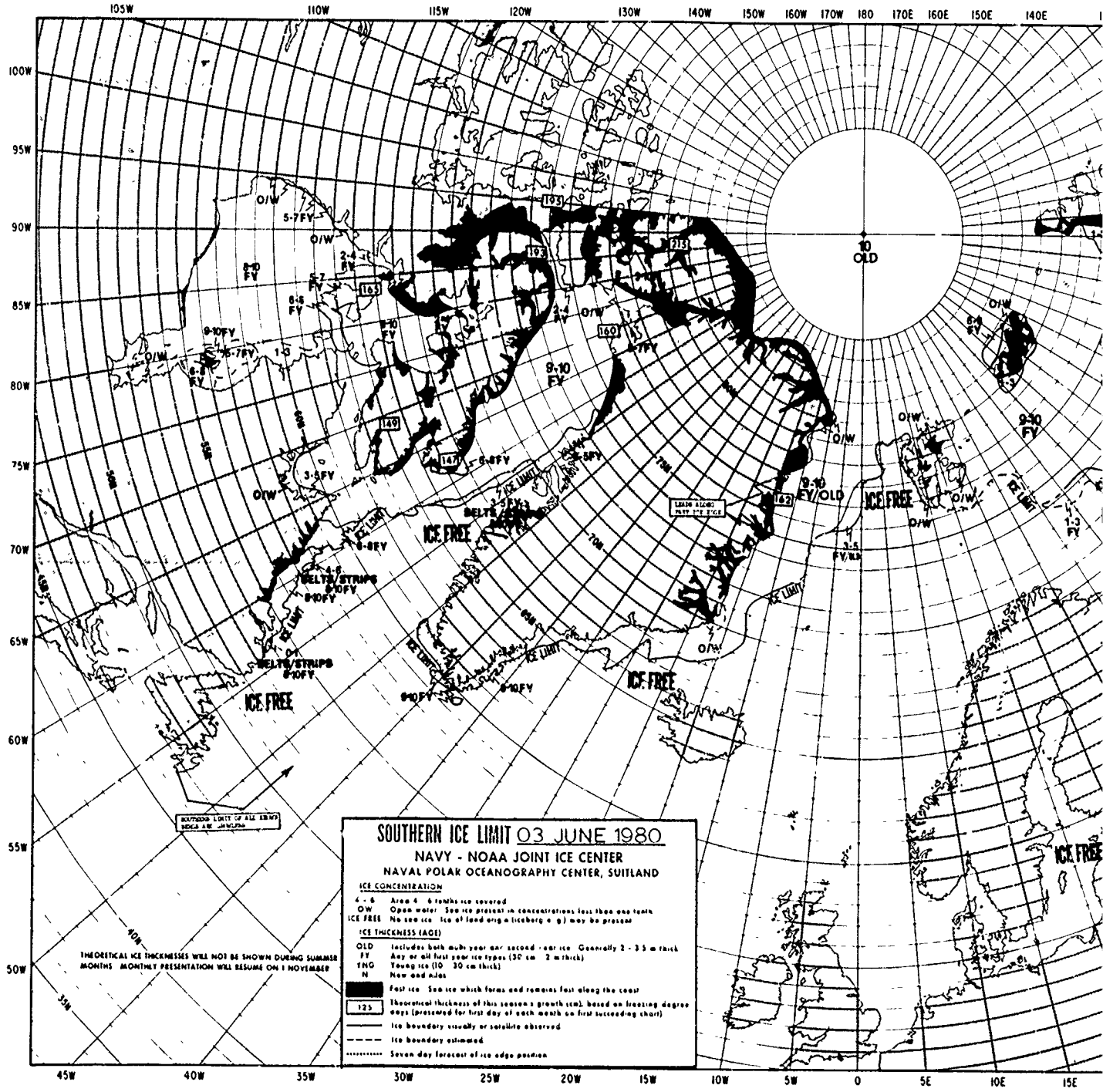
55E
50E
45E
5W 0 5E 10E 15E 20E 25E 30E 35E 40E
10 OLD
OLD/FY
9-10 FY
9-10 OLD/FY
ICE FREE
O/W
8-4FY
ICE LIMIT

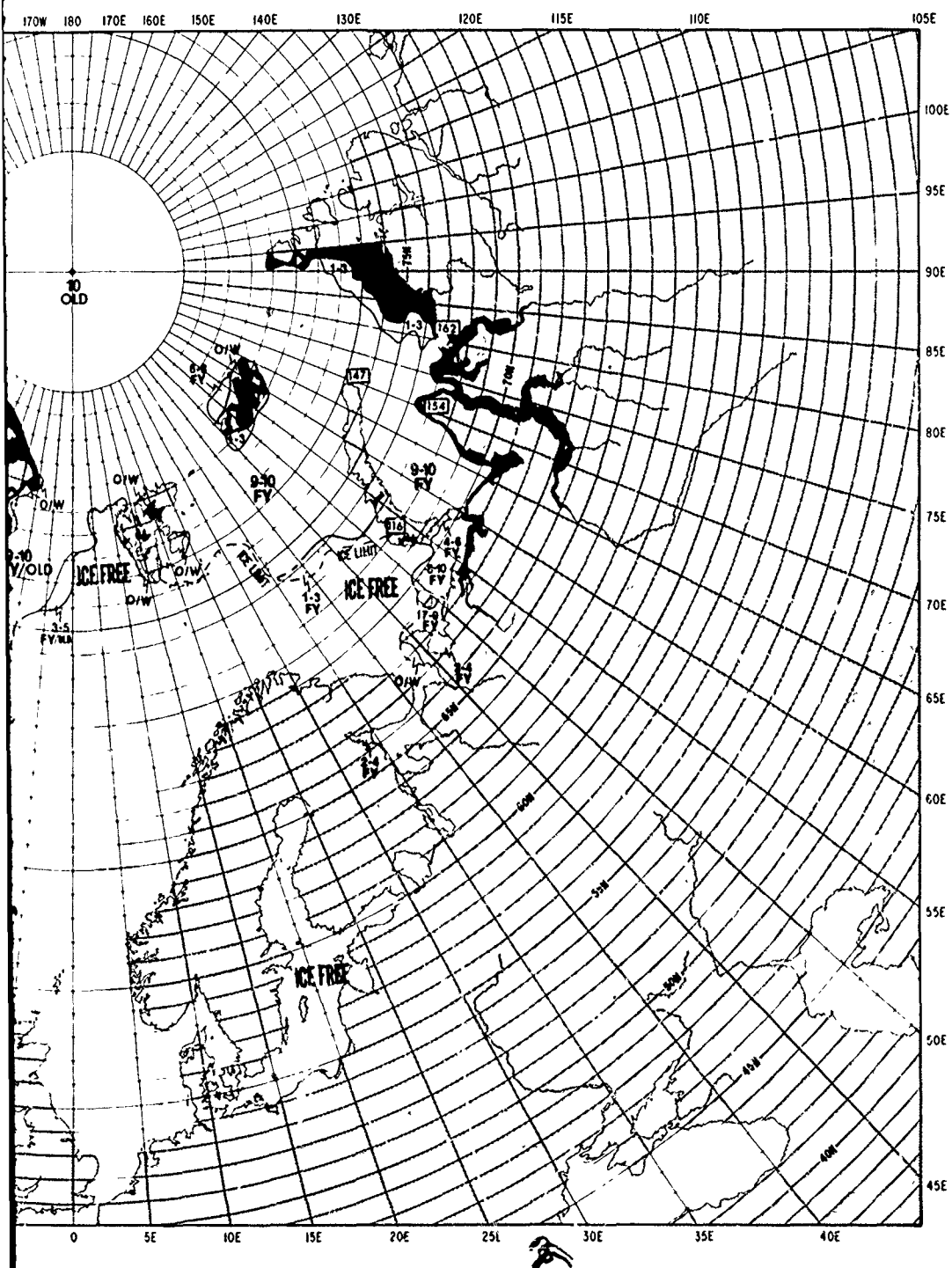
2


SOUTHERN ICE LIMIT 27 MAY 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
O W Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3.5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree day (presented for 1 st day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
10 OLD
9-10 FY
9-10 FY/OLD
2-4FY/OLD
3-5FY/OLD
4-6FY/OLD
2-9FY/OLD
1-3FY
1-3 FY
BELTS/STRIPS 8-10
5-7FY BELTS STRIPS 8-10
0-1 PTCHS 8-10
5-7FY PTCHS 8-10
6-8 FY
5-7FY
8-10FY
5-8FY
O/W
ICE FREE


170W
180
170E
160E
150E
140E
130E
120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
0
5E
10E
15E
20E
25E
30E
35E
40E
10
OLD
O/W
9-10
FY
1-3FY
2-4FY
9-10
FY/OLD
2-4FY/OLD
ICE FREE
75N
70N
65N
60N
55N
50N
45N
40N

2


SOUTHERN ICE LIMIT 03 JUNE 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 - 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 - 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm), based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
THEORETICAL ICE THICKNESSES WILL NOT BE SHOWN DURING SUMMER MONTHS MONTHLY PRESENTATION WILL RESUME ON 1 NOVEMBER
ICE FREE
BELTS/STRIPS
9-10 FY
9-10 FY/OLD
10 OLD
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E


170W
180
170E
160E
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140E
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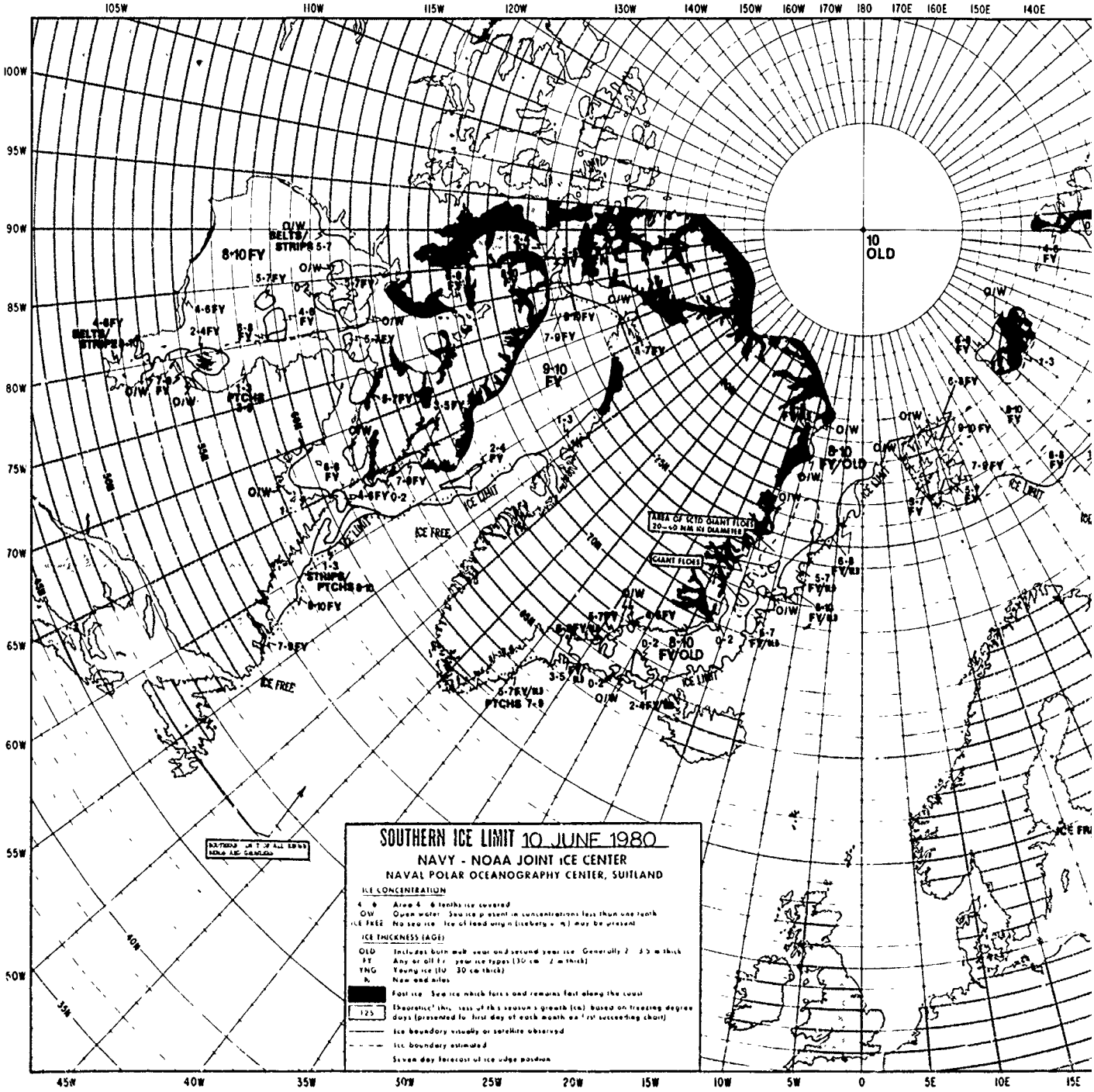
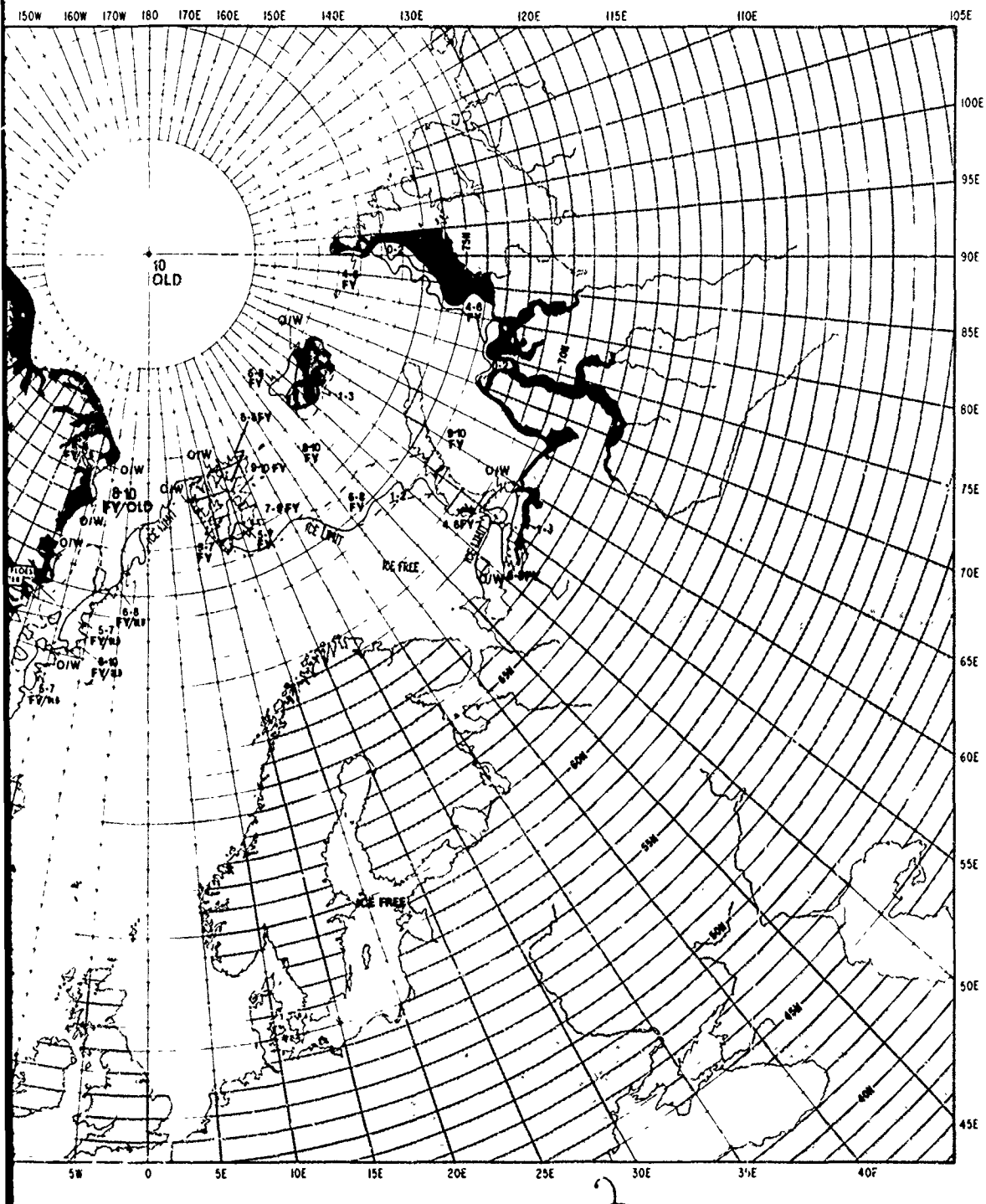
120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
0
5E
10E
15E
20E
25E
30E
35E
40E
10
OLD
ICE FREE
ICE FREE
ICE FREE
9-10
FY
9-10
FY
O/W
1-3
FY
162
147
154
ICE LIMIT
3-5
FY/OLD


SOUTHERN ICE LIMIT 10 JUNE 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
OLD
FY
YNG
Fast ice
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
10 OLD
8-10 FY
9-10 FY
8-10 FY/OLD
ICE FREE
ICE LIMIT
GIANT FLOES
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E


150W
160W
170W
180
170E
160E
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130E
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115E
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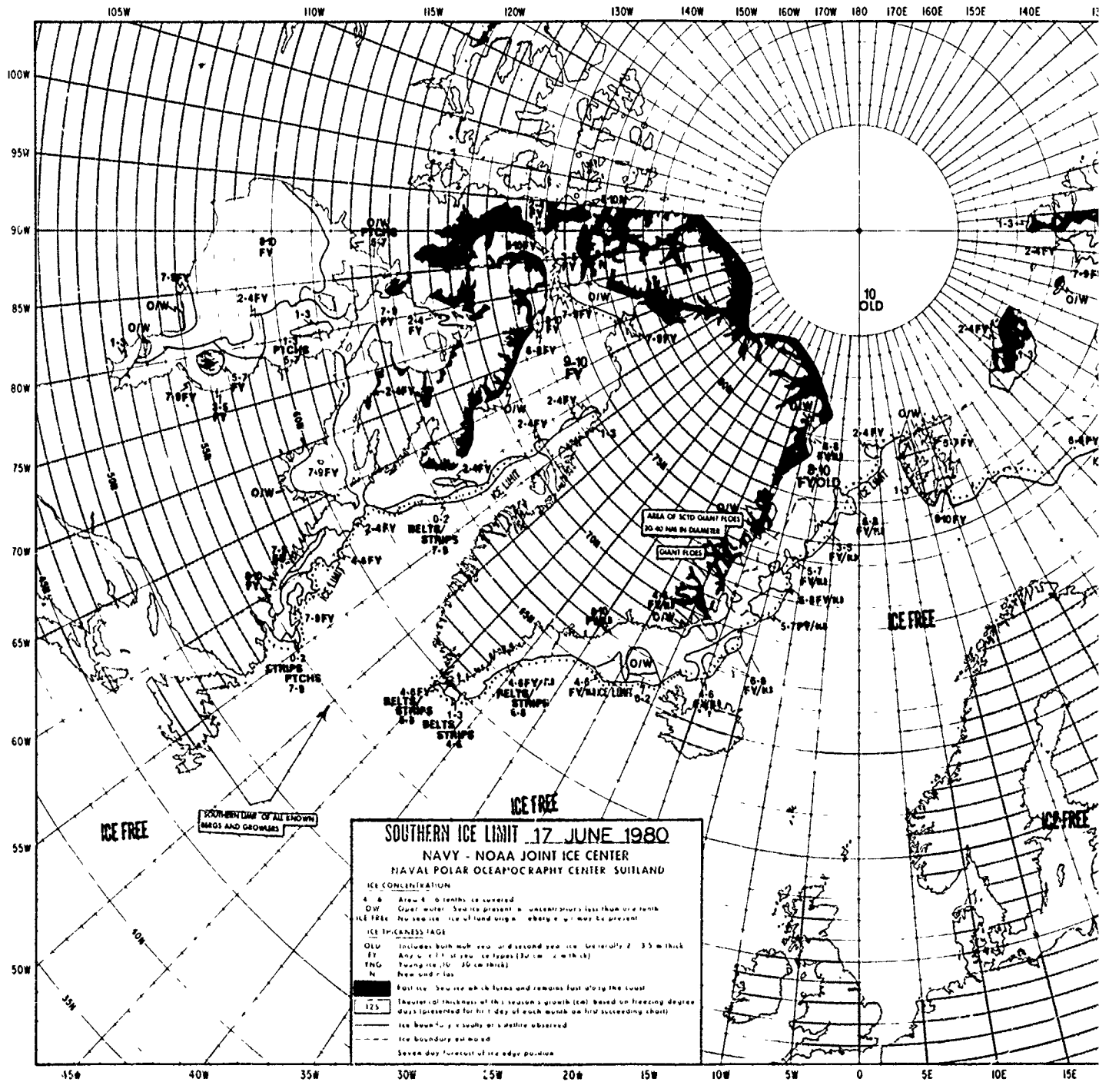
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
10
OLD
8-10
FY/OLD
O/W
ICE LIMIT
ICE FREE
ICE FREE

2


105W
110W
115W
120W
130W
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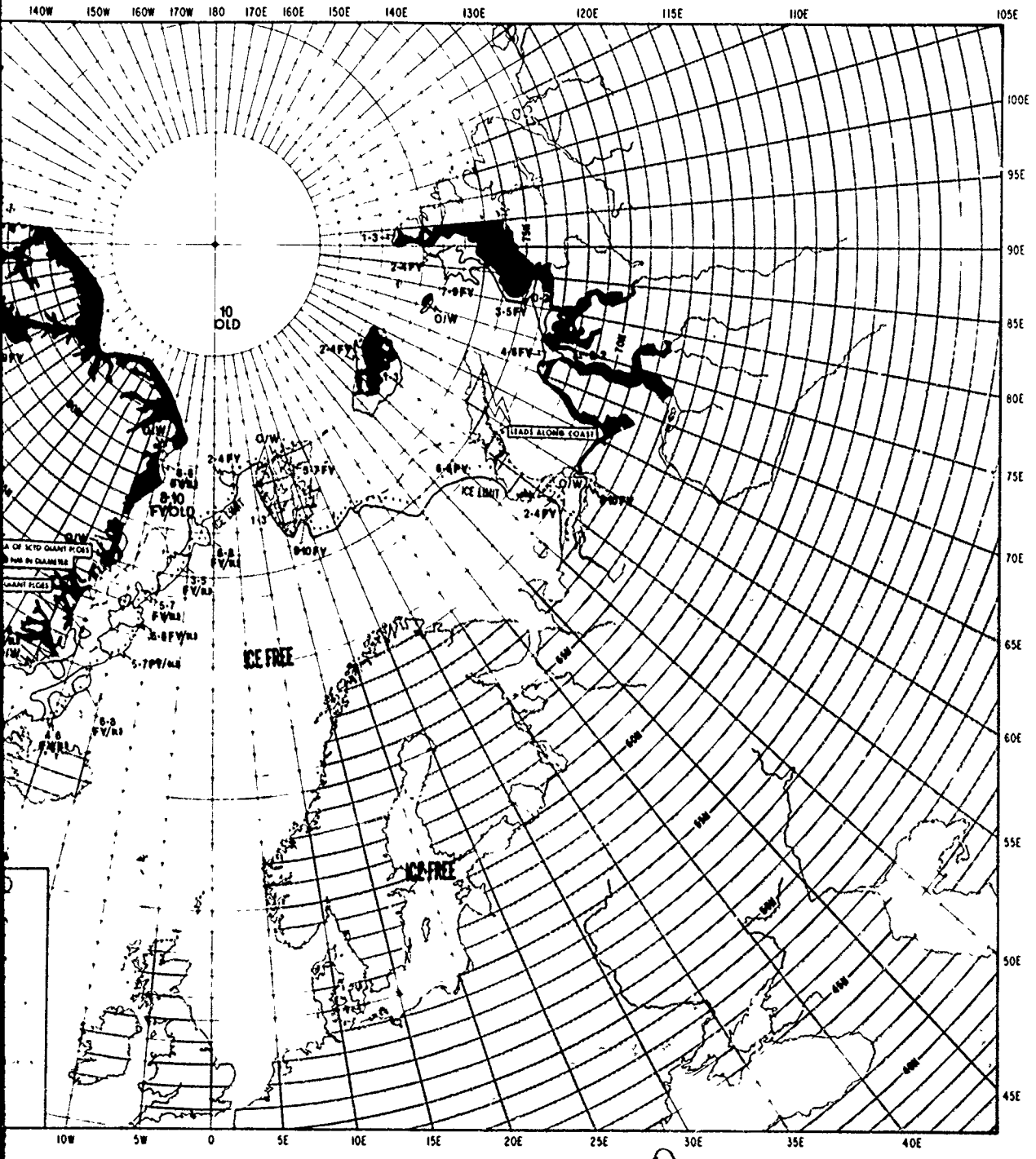
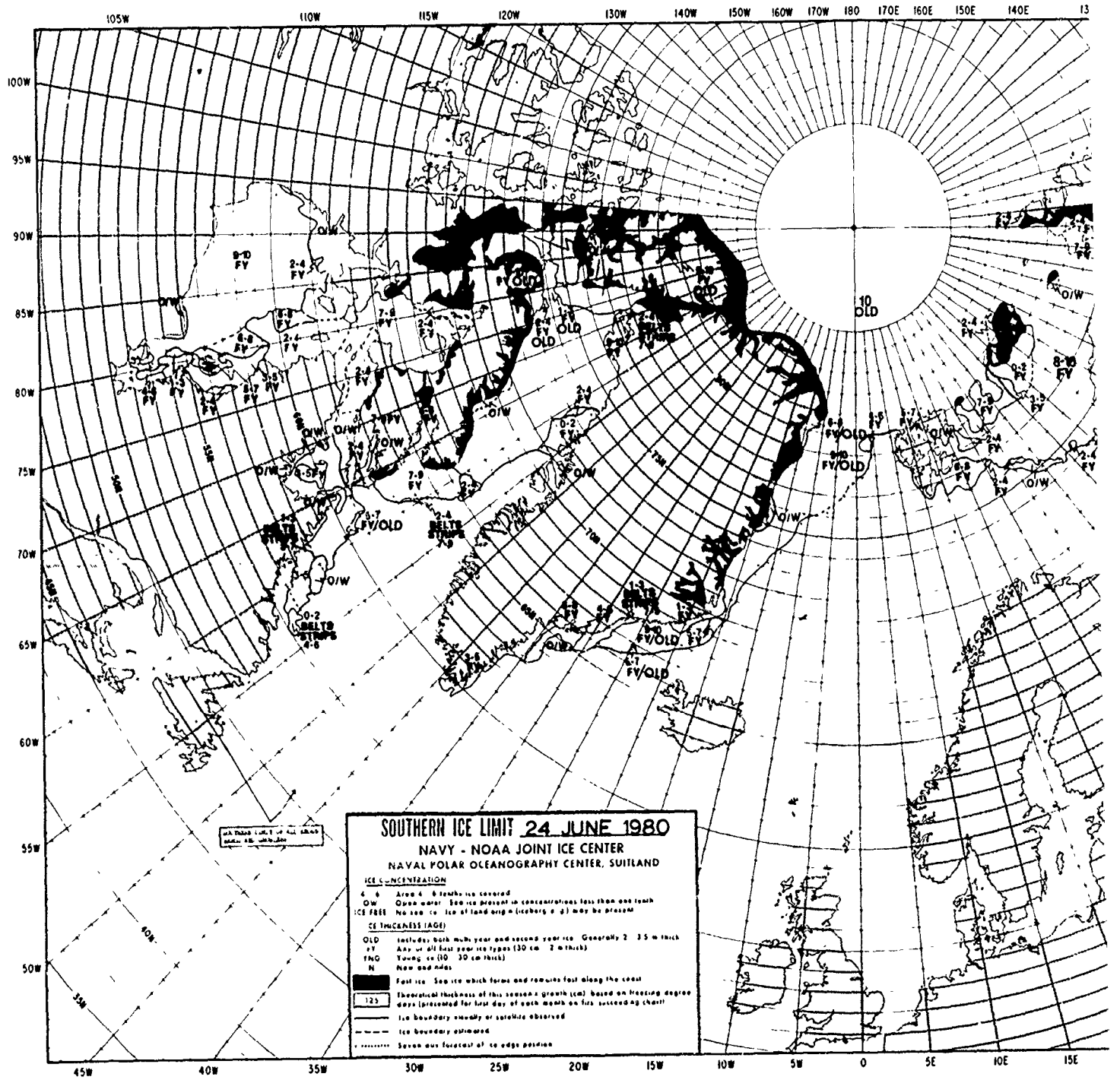
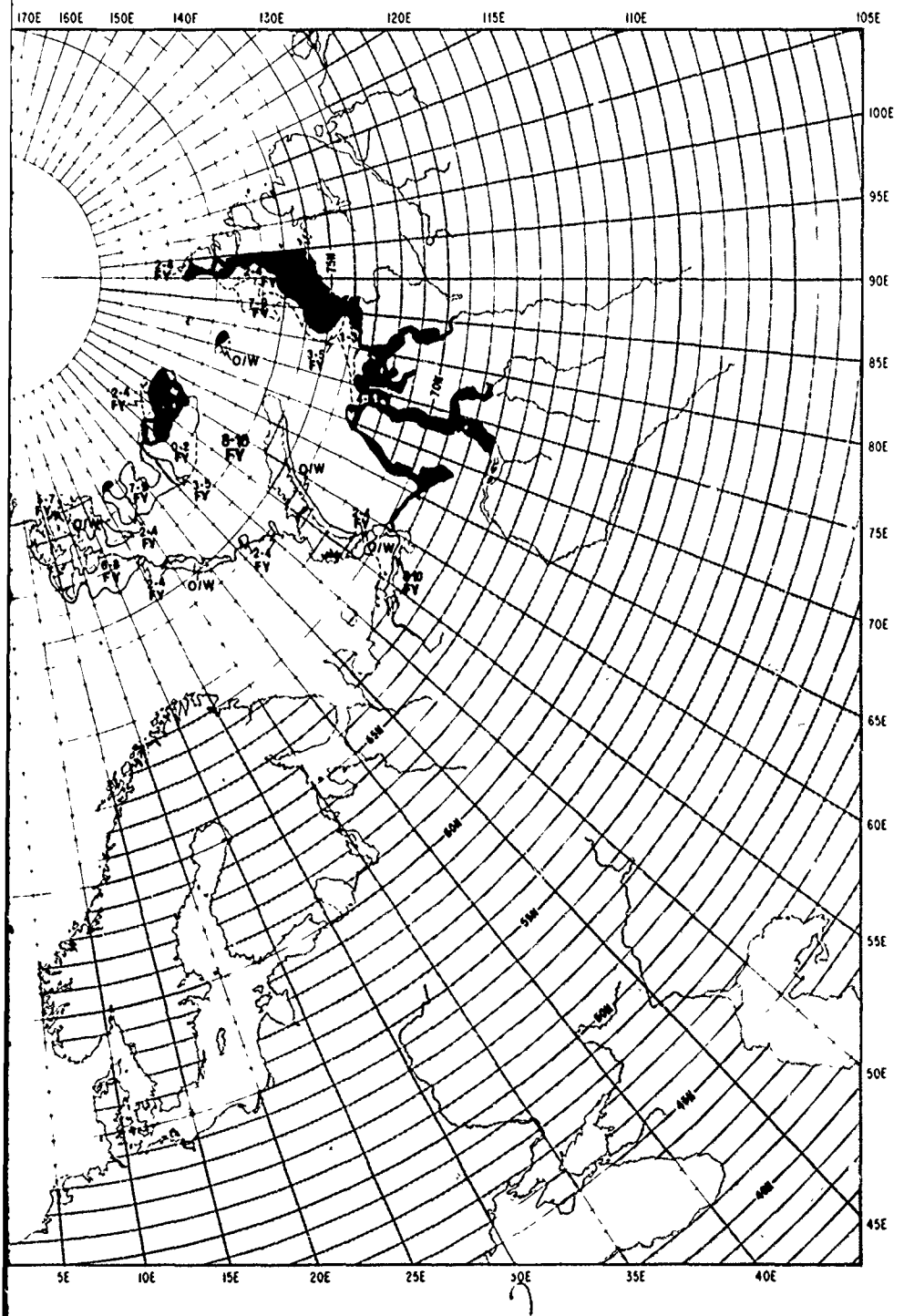
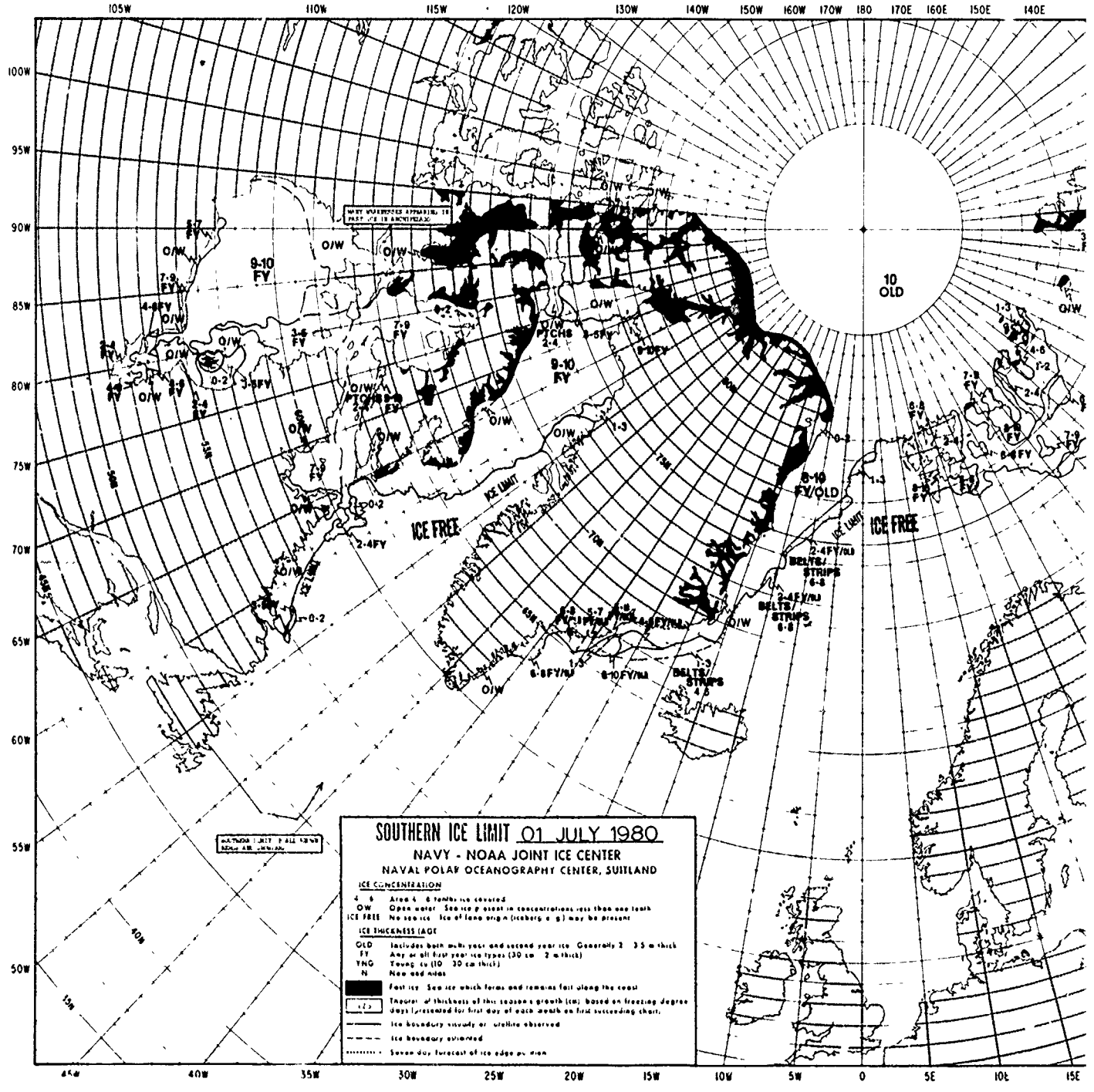
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
ICE FREE
ICE FREE
ICE FREE
ICE FREE
10 OLD
AREA OF SCTD GIANT FLOES 20-40 NM IN DIAMETER
GIANT FLOES
ICE LIMIT
SOUTHERN LIMIT OF ALL KNOWN BERGS AND GROWLERS
SOUTHERN ICE LIMIT 17 JUNE 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
ICE CONCENTRATION
4 - 6 Areas 4 - 6 tenths ice covered
OW Open water - Sea ice present in concentrations less than one tenth
ICE FREE No sea ice - ice of land origin - observed ice may be present
ICE THICKNESS/AGE
OLD Includes both multi-year and second year ice - Generally 2 - 3.5 m thick
FY Any one of several ice types (30 cm - 2 m thick)
TNG Young ice (10 - 30 cm thick)
N New and nilas
Fast Ice - Sea ice which forms and remains fast along the coast
Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary as analyzed
Ice boundary estimated
Seven day forecast of ice edge position


140W
150W
160W
170W
180
170E
160E
150E
140E
130E
120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
10W
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
10
OLD
8-10
FV/OLD
ICE FREE
ICE FREE
LEADS ALONG COAST
ICE LIMIT
O/W
2-4FV
3-5FV
4-6FV
7-9FV
6-8FV
5-7FV
9-10FV

2


SOUTHERN ICE LIMIT 24 JUNE 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3.5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
10 OLD
O/W
FY/OLD
BELTS STRIPS


170E
160E
150E
140E
130E
120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
5E
10E
15E
20E
25E
30E
35E
40E
O/W
8-10 FV
2-4 FV
7-9 FV
3-5 FV
0-2 FV
75N
70N
65N
60N
55N
50N
45N
40N


SOUTHERN ICE LIMIT 01 JULY 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart.
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
ICE FREE
ICE LIMIT
10 OLD
9-10 FY
8-10 FY/OLD
BELTS/ STRIPS
105W
110W
115W
120W
130W
140W
150W
160W
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180
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160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
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30W
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20W
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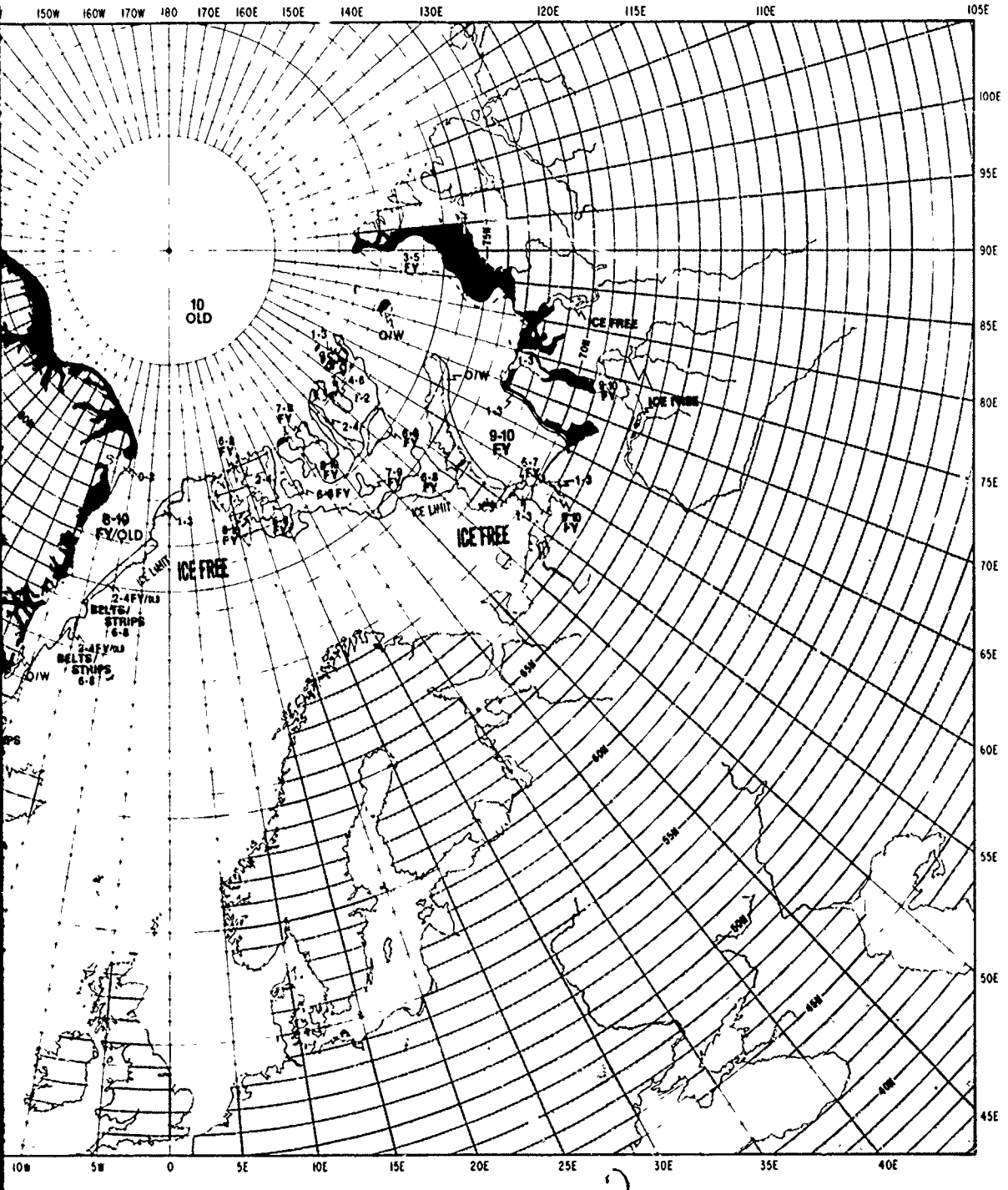
10W
5W
0
5E
10E
15E



150W
160W
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115E
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50E
45E
10W
5W
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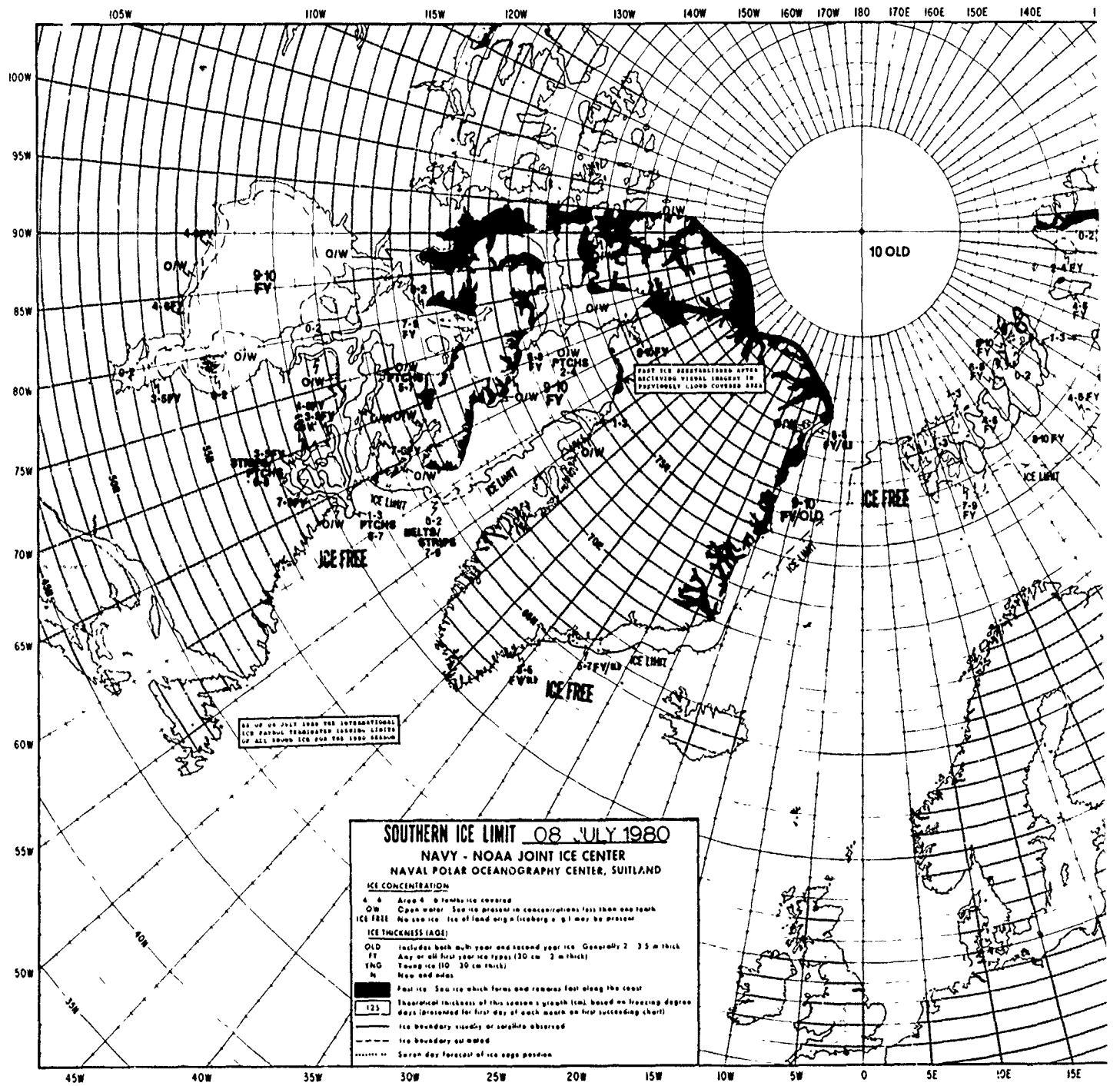
5E
10E
15E
20E
25E
30E
35E
40E
10
OLD
3-5
FY
O/W
ICE FREE
9-10
FY
8-10
FY/OLD
ICE LIMIT
ICE FREE
BELTS/
STRIPS
6-8

2


SOUTHERN ICE LIMIT 08 JULY 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm), based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
10 OLD
ICE FREE
ICE LIMIT
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
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80W
75W
70W
65W
60W
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40W
35W
30W
25W
20W
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10W
5W
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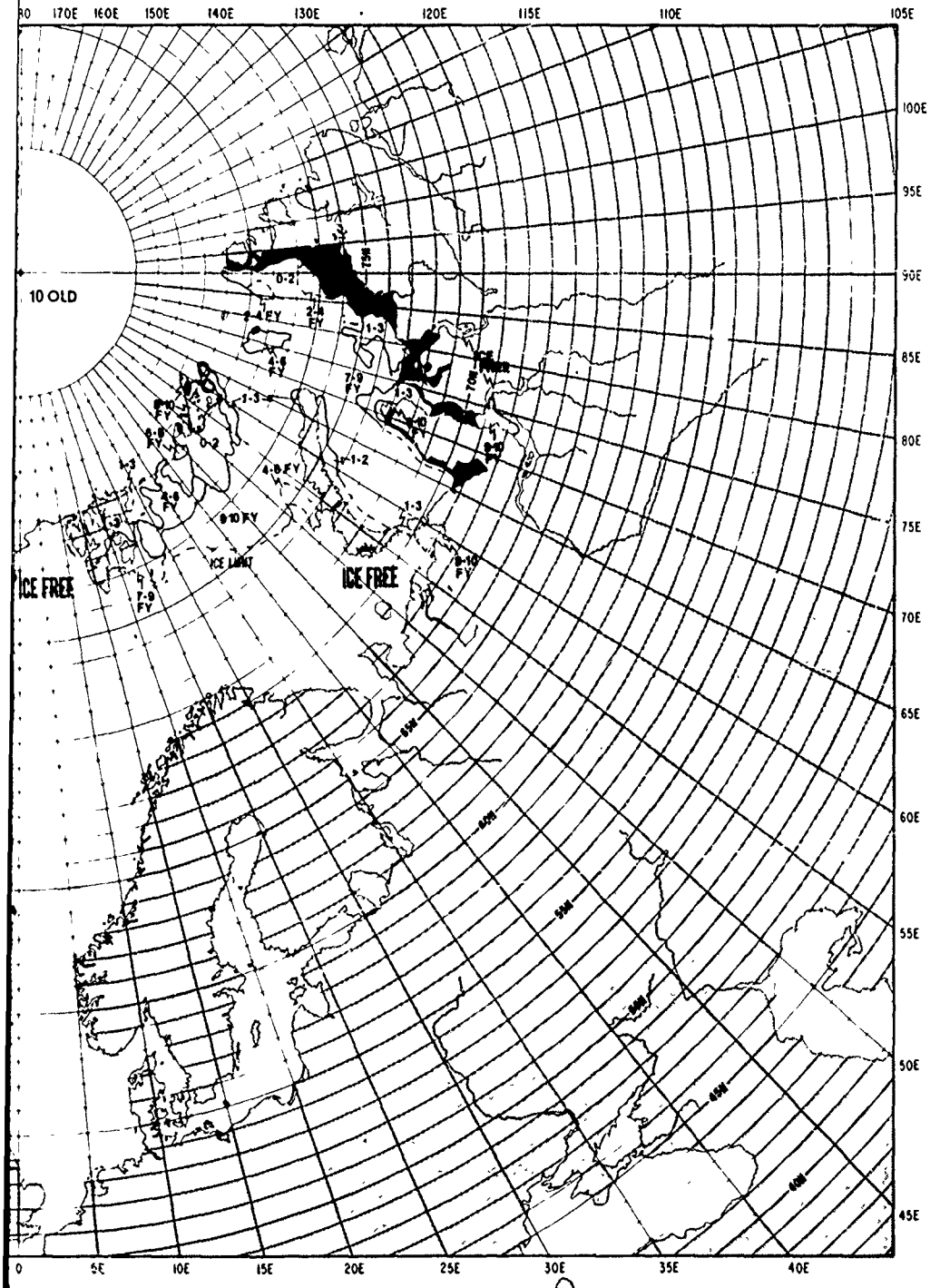
5E
10E
15E


170E
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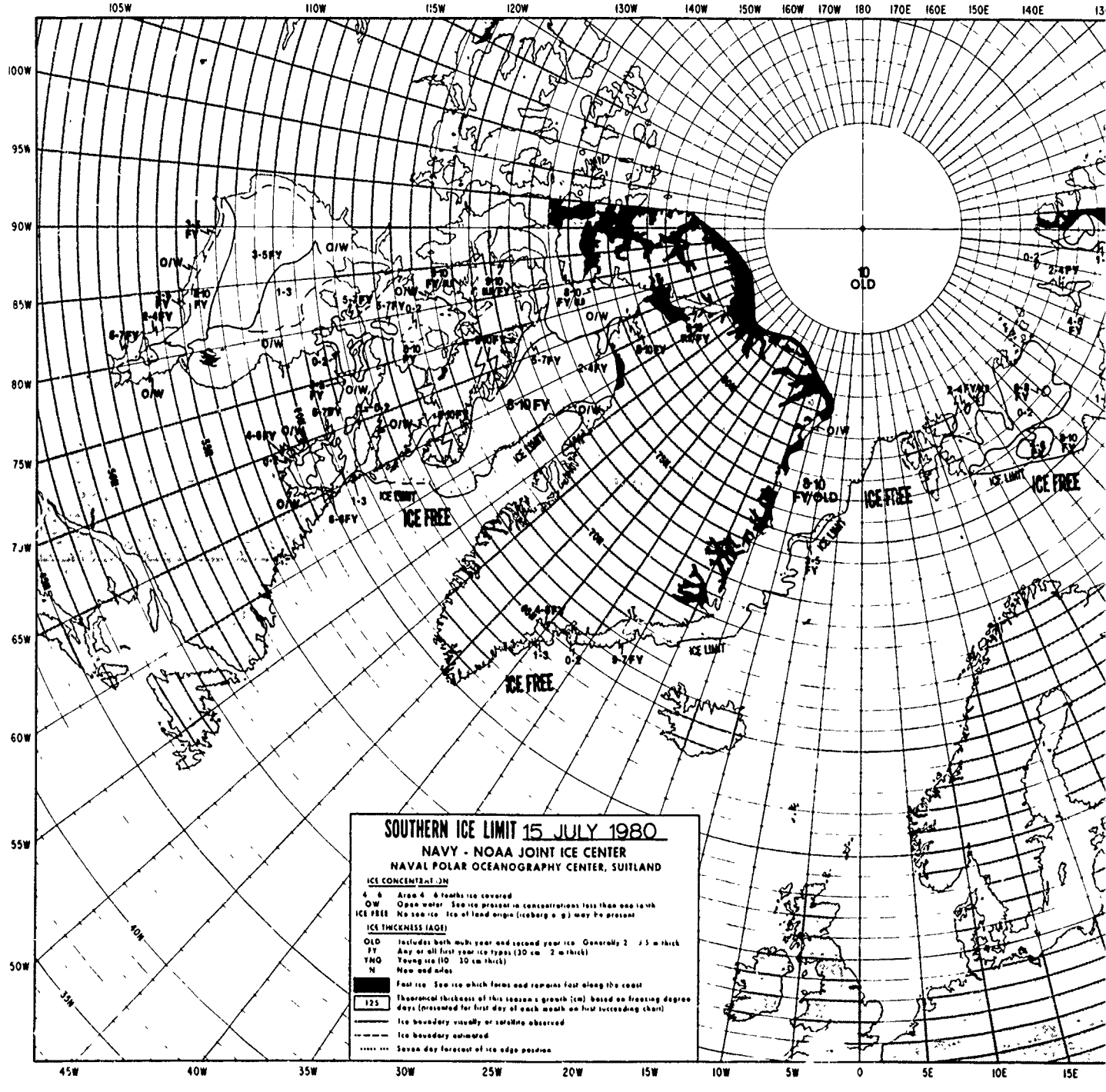
5E
10E
15E
20E
25E
30E
35E
40E
10 OLD
ICE FREE
ICE FREE
ICE LIMIT
0-2
1-3
1-2
4-6 FY
7-9 FY
9-10 FY

2


105W
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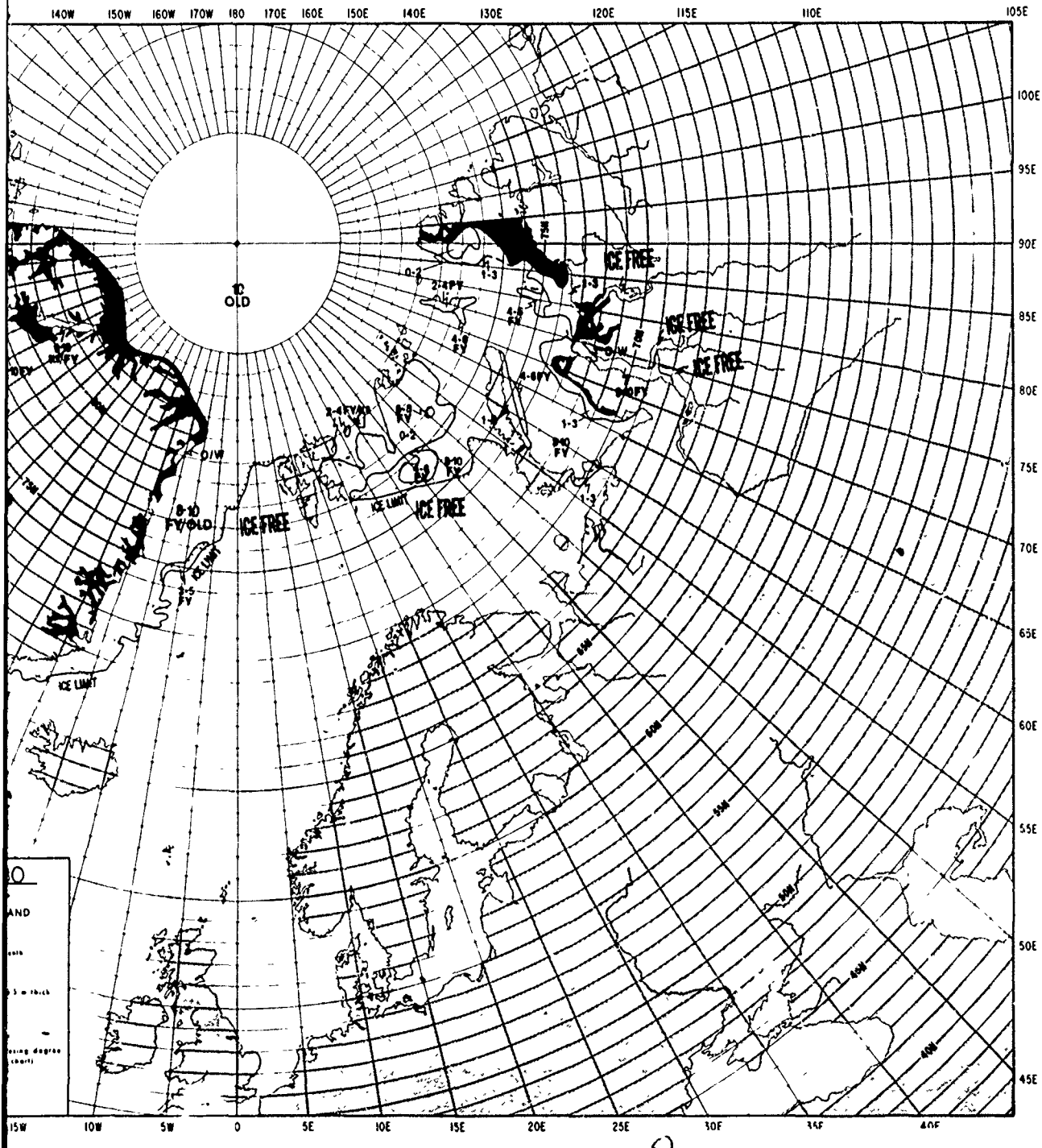
15W
10W
5W
0
5E
10E
15E
ICE FREE
ICE LIMIT
O/W
OLD
SOUTHERN ICE LIMIT 15 JULY 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
OLD
FY
YNG
N
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position


140W
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75E
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60E
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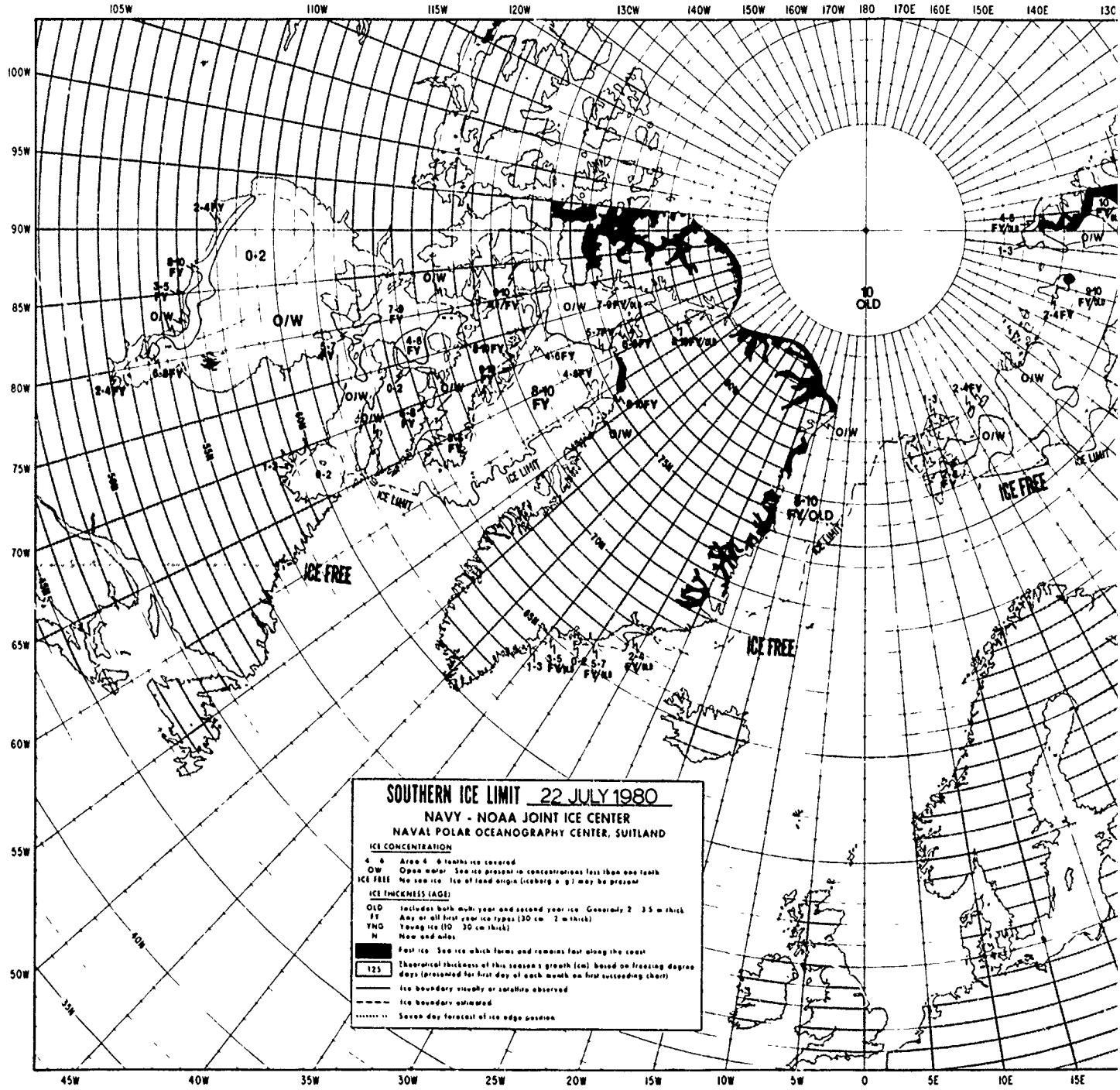
40E
ICE FREE
ICE LIMIT
OLD
AND

2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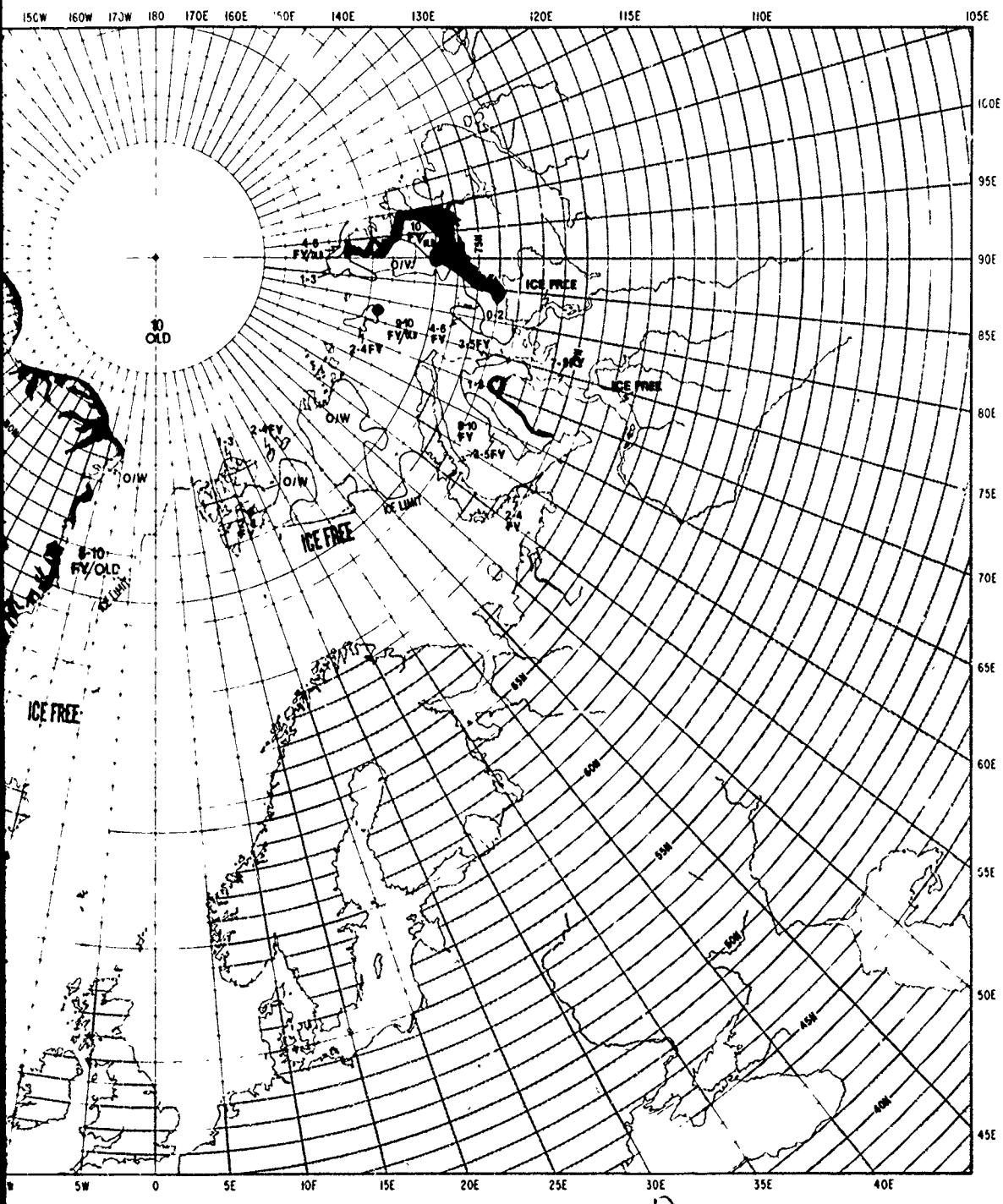
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
ICE FREE
ICE LIMIT
O/W
10 OLD
8-10 FV/OLD
SOUTHERN ICE LIMIT 22 JULY 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
O/W Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position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110E
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100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
ICE LIMIT
10 OLD
8-10 FY/OLD
4-6 FY/OLD
9-10 FY/OLD
10 FY/OLD
2-4FY
3-5FY
2-4 FY
8-10 FY
O/W
O/W
O/W
O/W
O/W
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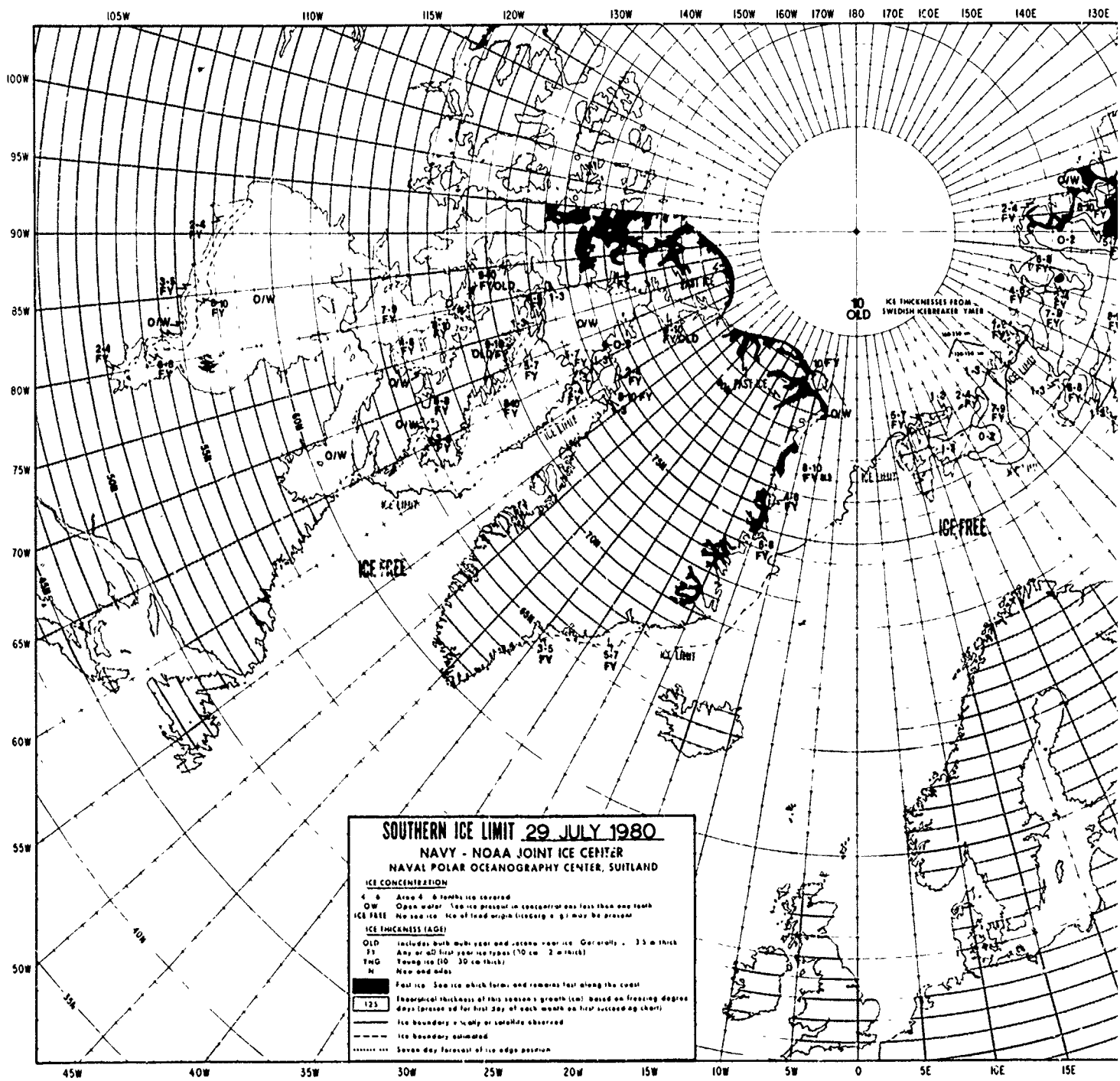
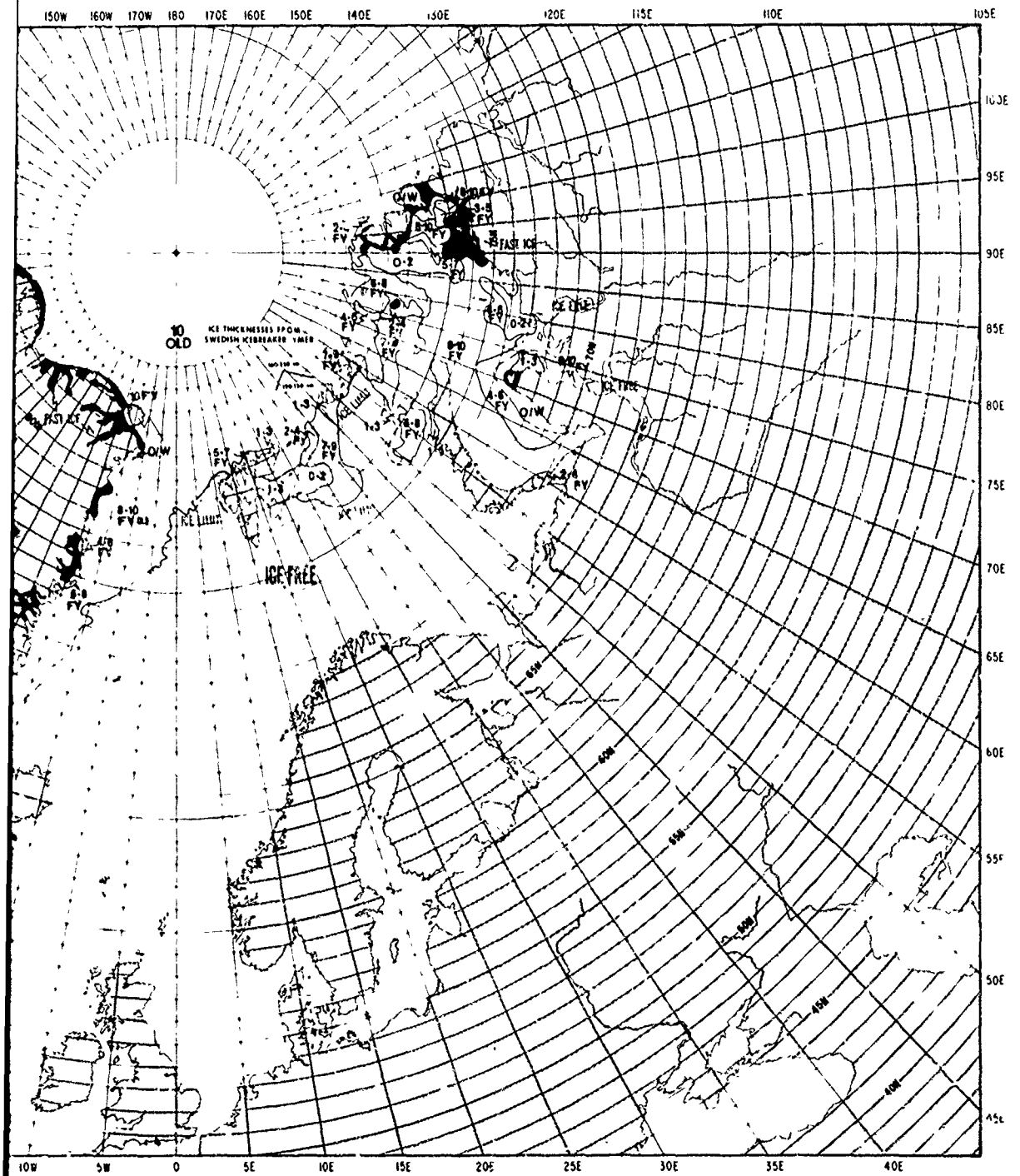
1-3
1-4
1-4
0/2
0/2
0/2


SOUTHERN ICE LIMIT 29 JULY 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 - 6 Area 4 - 6 tenths ice covered
OW Open water. Sea ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (icebergs e.g.) may be present
ICE THICKNESS (AGE)
OLD Includes both multi-year and second-year ice. Generally > 3.5 m thick
FY Any or all first year ice types (30 cm - 2 m thick)
TNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
ICE FREE
ICE LIMIT
FAST ICE
10 OLD
ICE THICKNESSES FROM SWEDISH ICEBREAKER YMER
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
130E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E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160W
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120E
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105E
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95E
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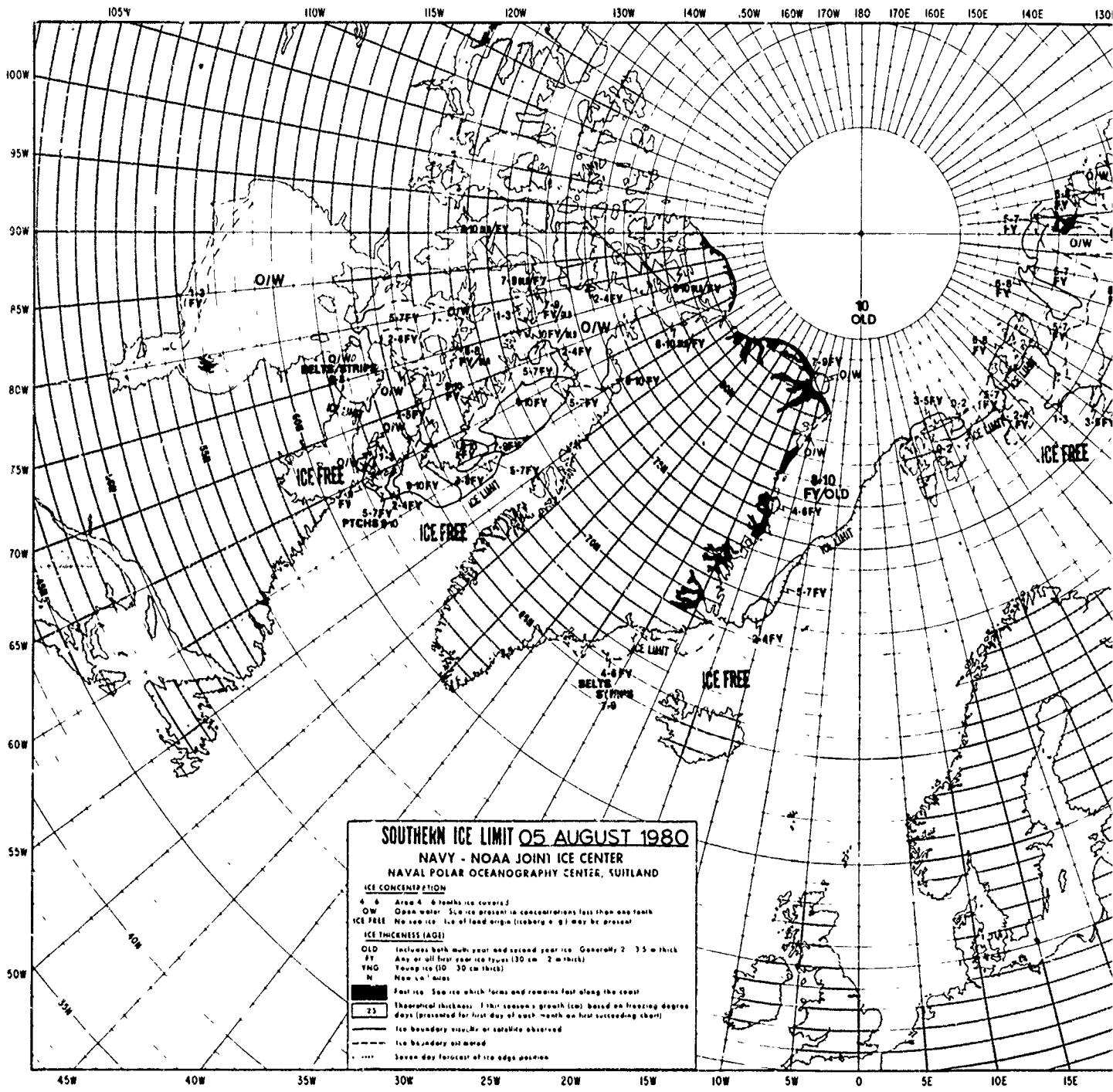
85E
80E
75E
70E
65E
60E
55E
50E
45E
10W
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
10 OLD
ICE THICKNESSES FROM SWEDISH ICEBREAKER YMER
FAST ICE
ICE FREE
O/W
65N
60N
55N
50N
45N
40N

2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160W
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100W
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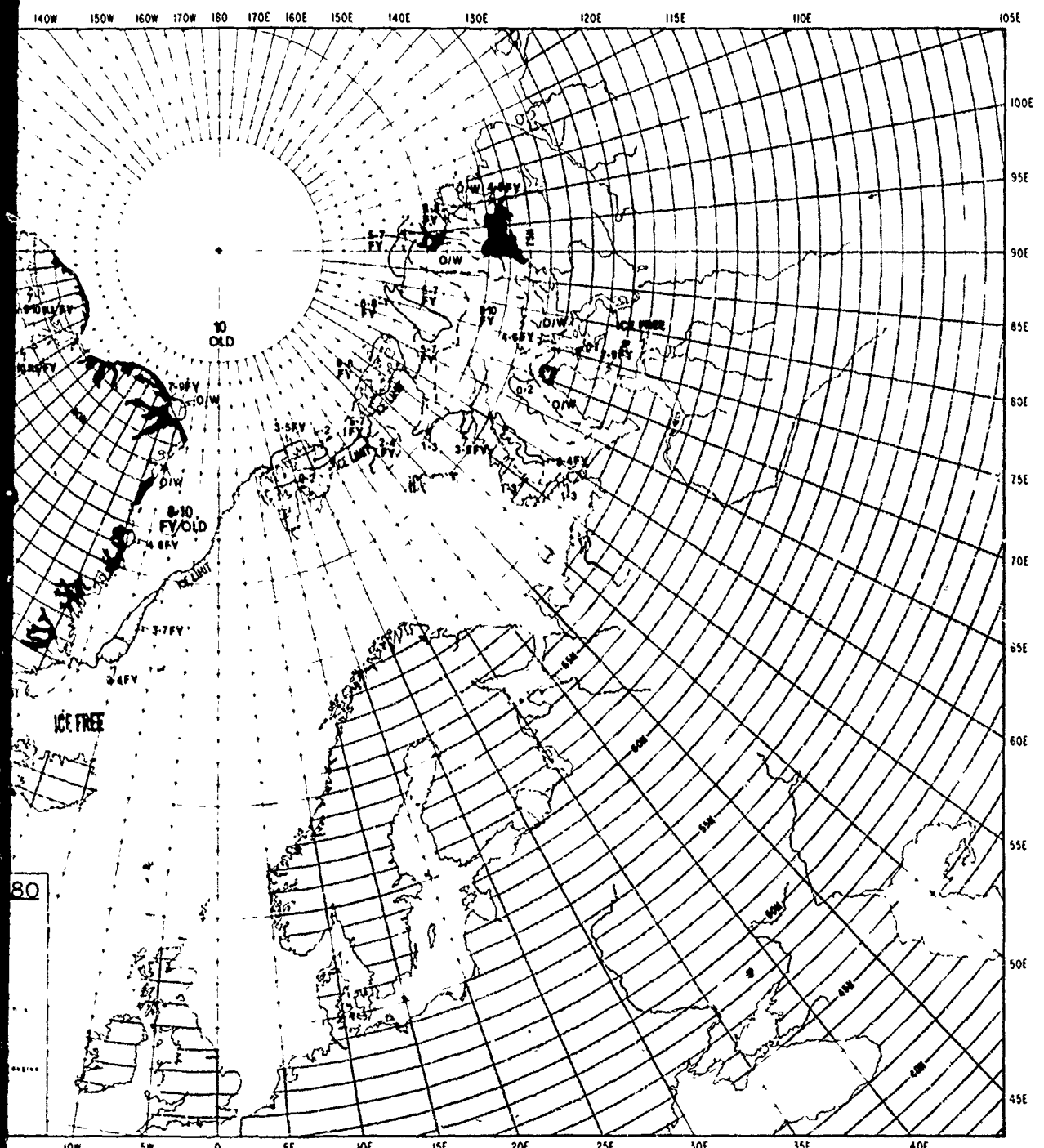
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
O/W
ICE FREE
ICE LIMIT
10 OLD
FY/OLD
SOUTHERN ICE LIMIT 05 AUGUST 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
OLD
FY
YNG
N
Fast ice
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position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110E
105E
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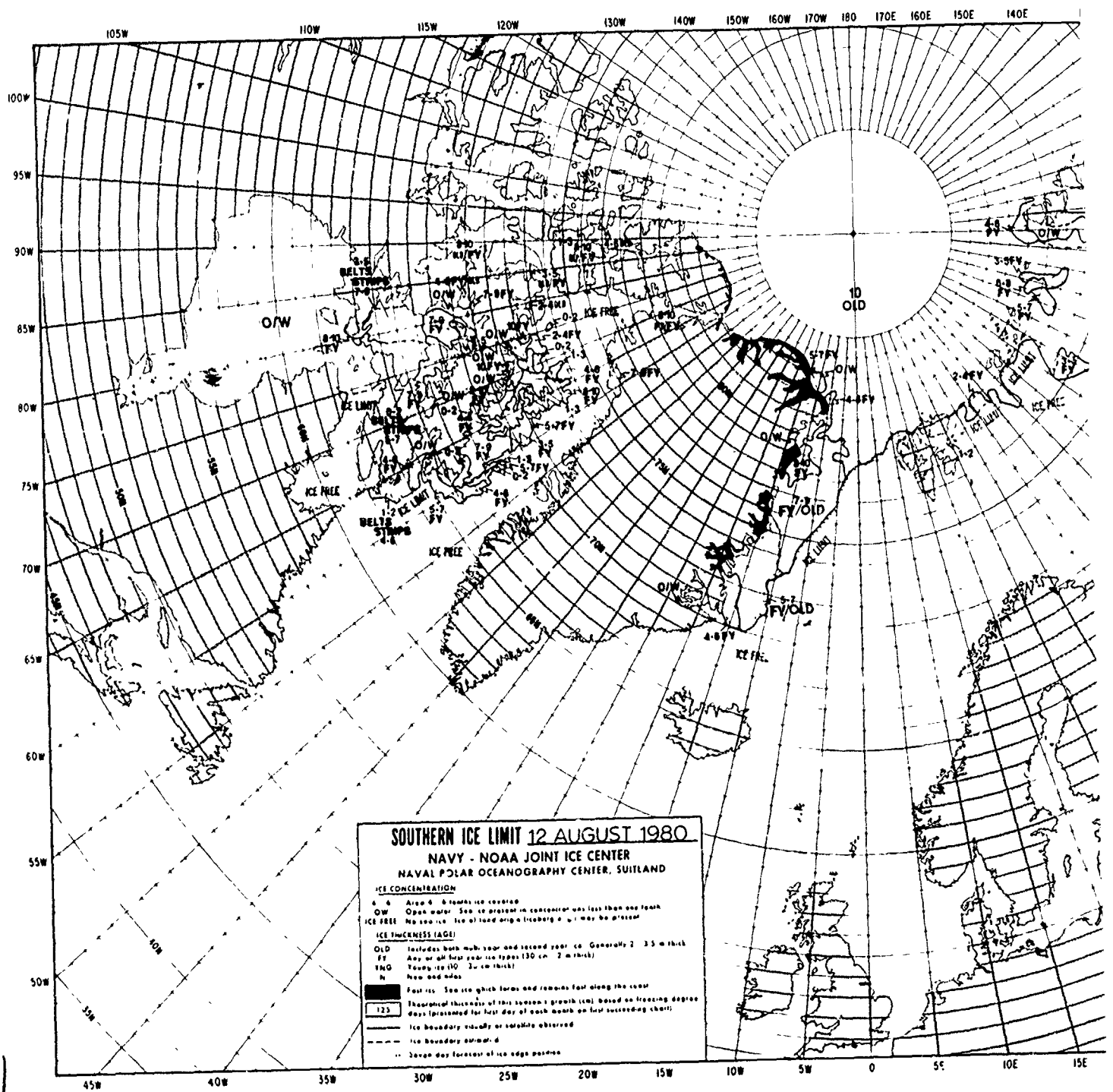
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
10W
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
10 OLD
8-10 FY/OLD
ICE FREE
O/W
D/W
ICE LIMIT
80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180
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150E
140E
100W
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75W
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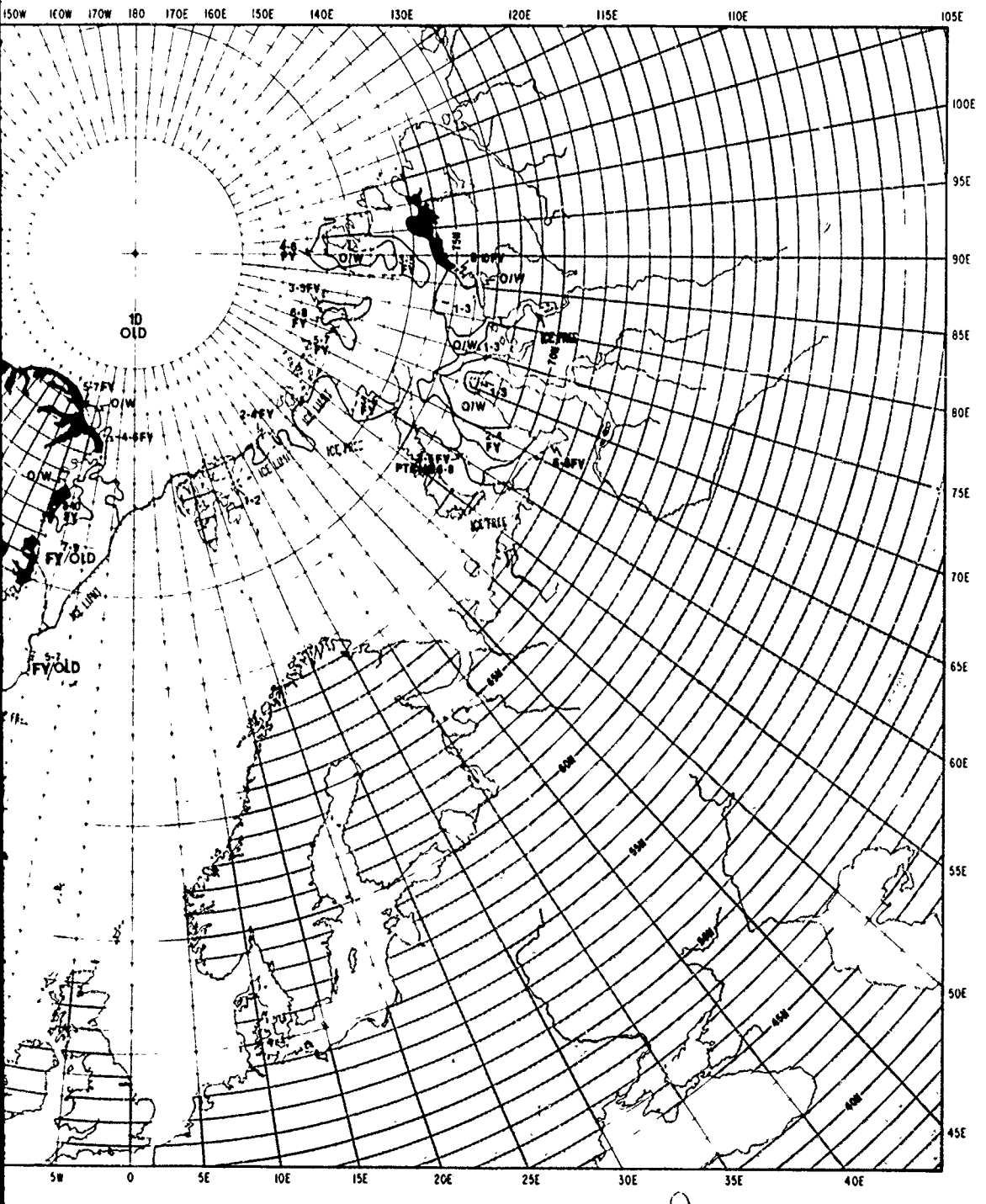
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
O/W
ICE FREE
ICE LIMIT
FY/OLD
OLD
SOUTHERN ICE LIMIT 12 AUGUST 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
OLD
FY
Fast ice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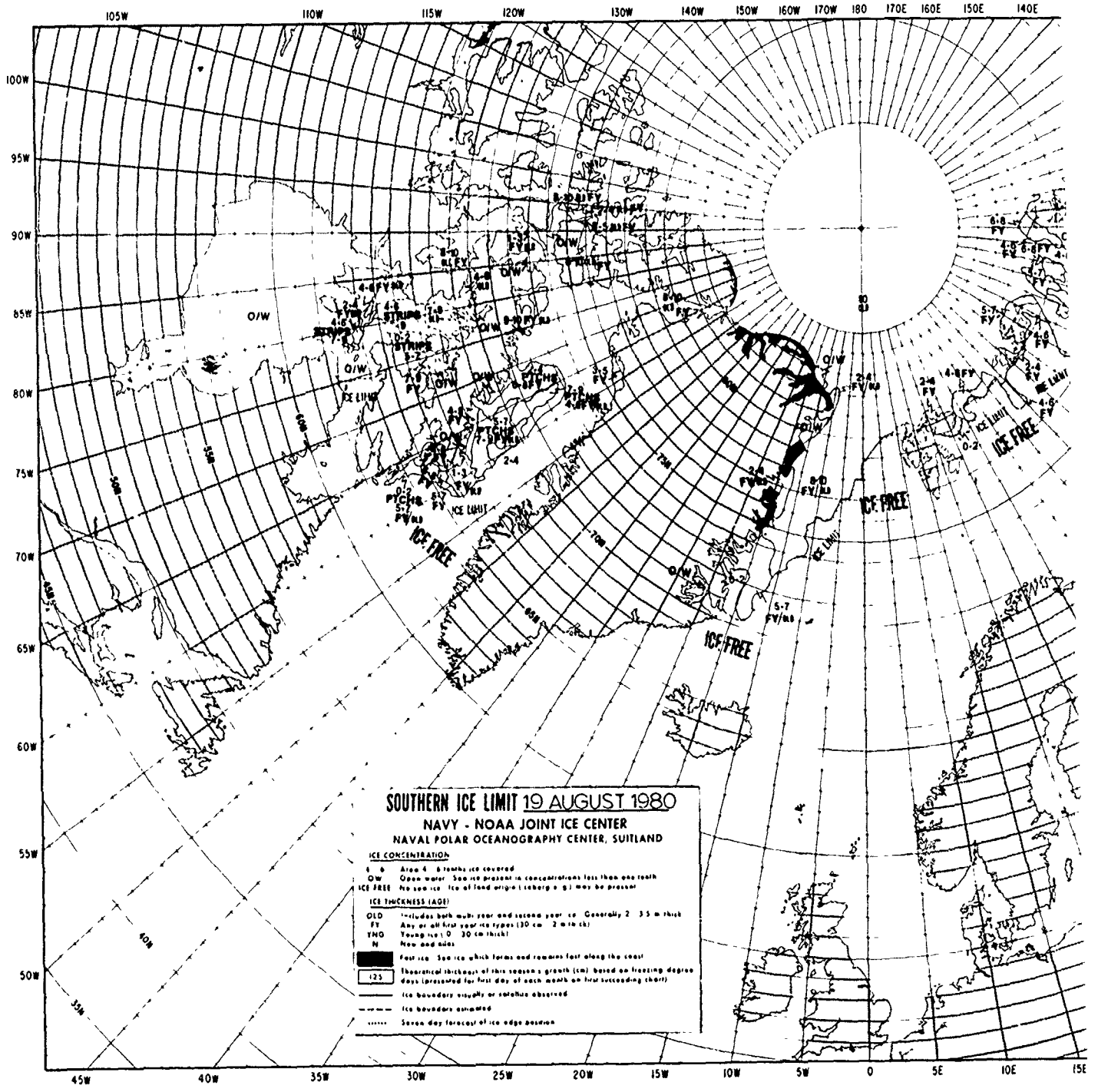
45E
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
1D
OLD
O/W
FY/OLD
ICE LIMIT
ICE FREE
1-3
2-4
FY
3-5FY
4-6FY
5-7FY
6-8FY
7-9
5-7
1-2
65N
60N
55N
50N
45N
40N

2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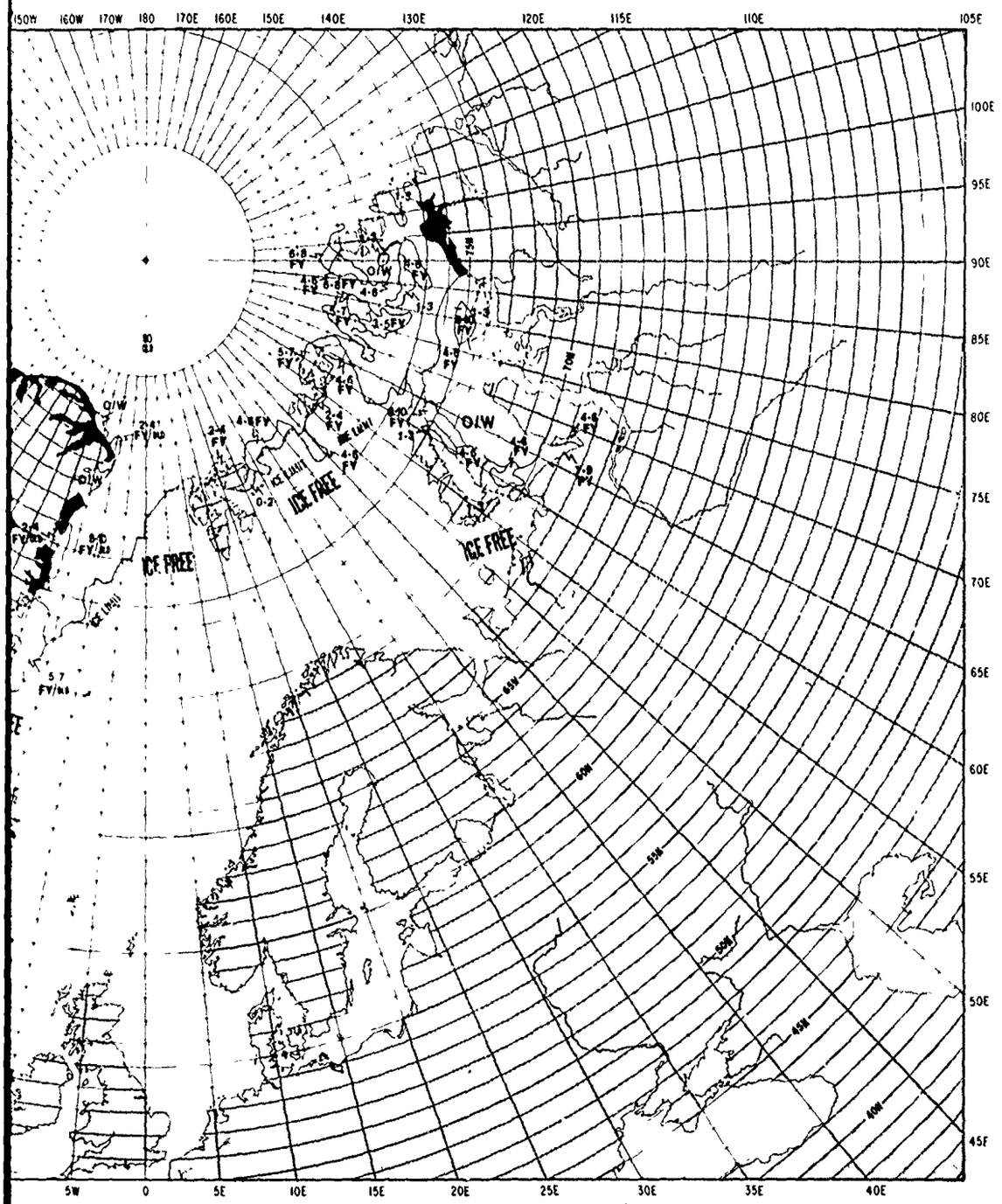
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
O/W
ICE FREE
ICE LIMIT
SOUTHERN ICE LIMIT 19 AUGUST 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
OLD
FY
YNG
N
Fast ice
Ice boundary assumed
Seven day forecast of ice edge position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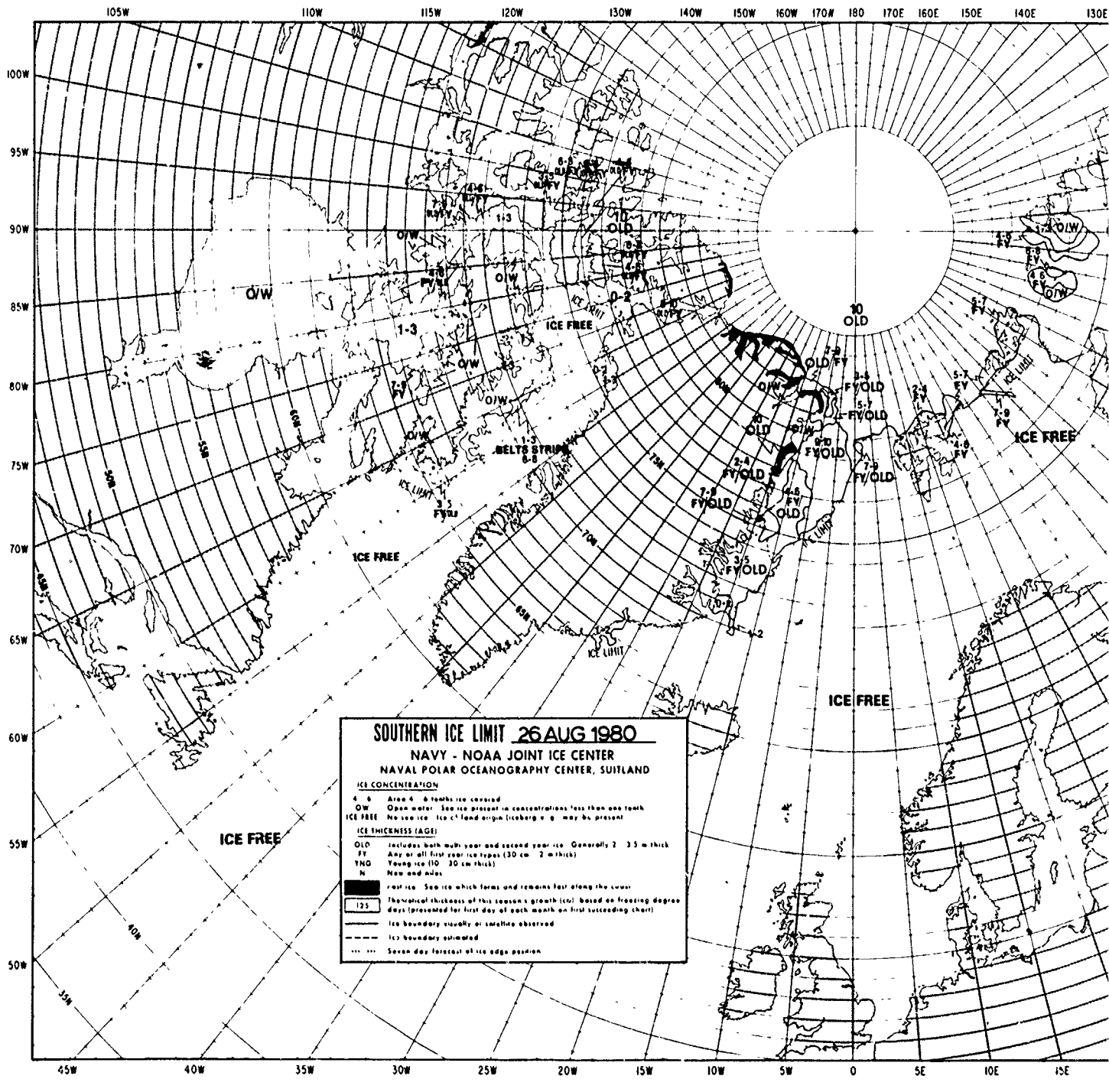
20E
25E
30E
35E
40E
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
O/W
65N
60N
55N
50N
45N
40N

2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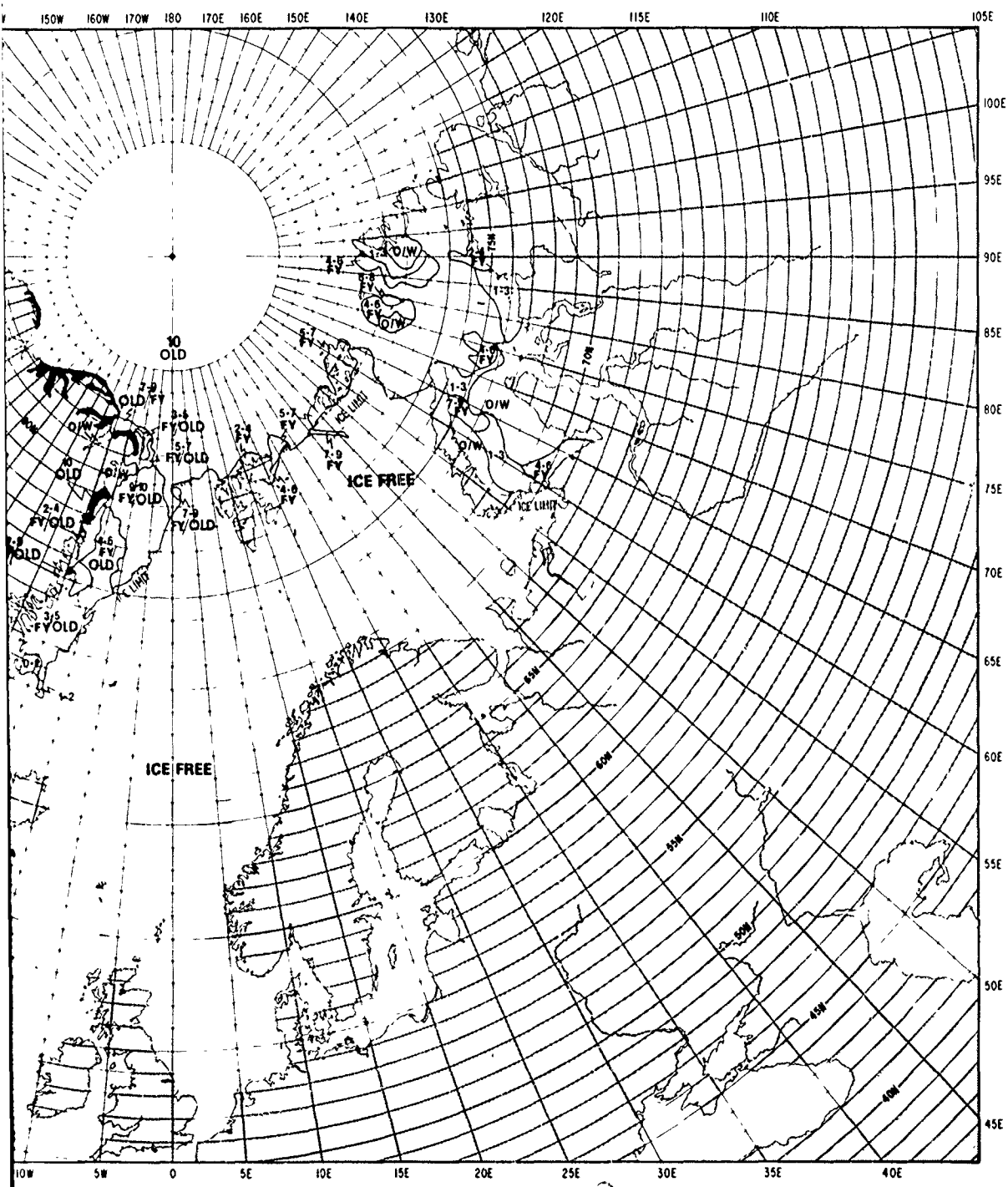
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
ICE FREE
O/W
1-3
BELTS STRIPS
ICE LIMIT
SOUTHERN ICE LIMIT 26 AUG 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
Theoretical thickness of this season s growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary usually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position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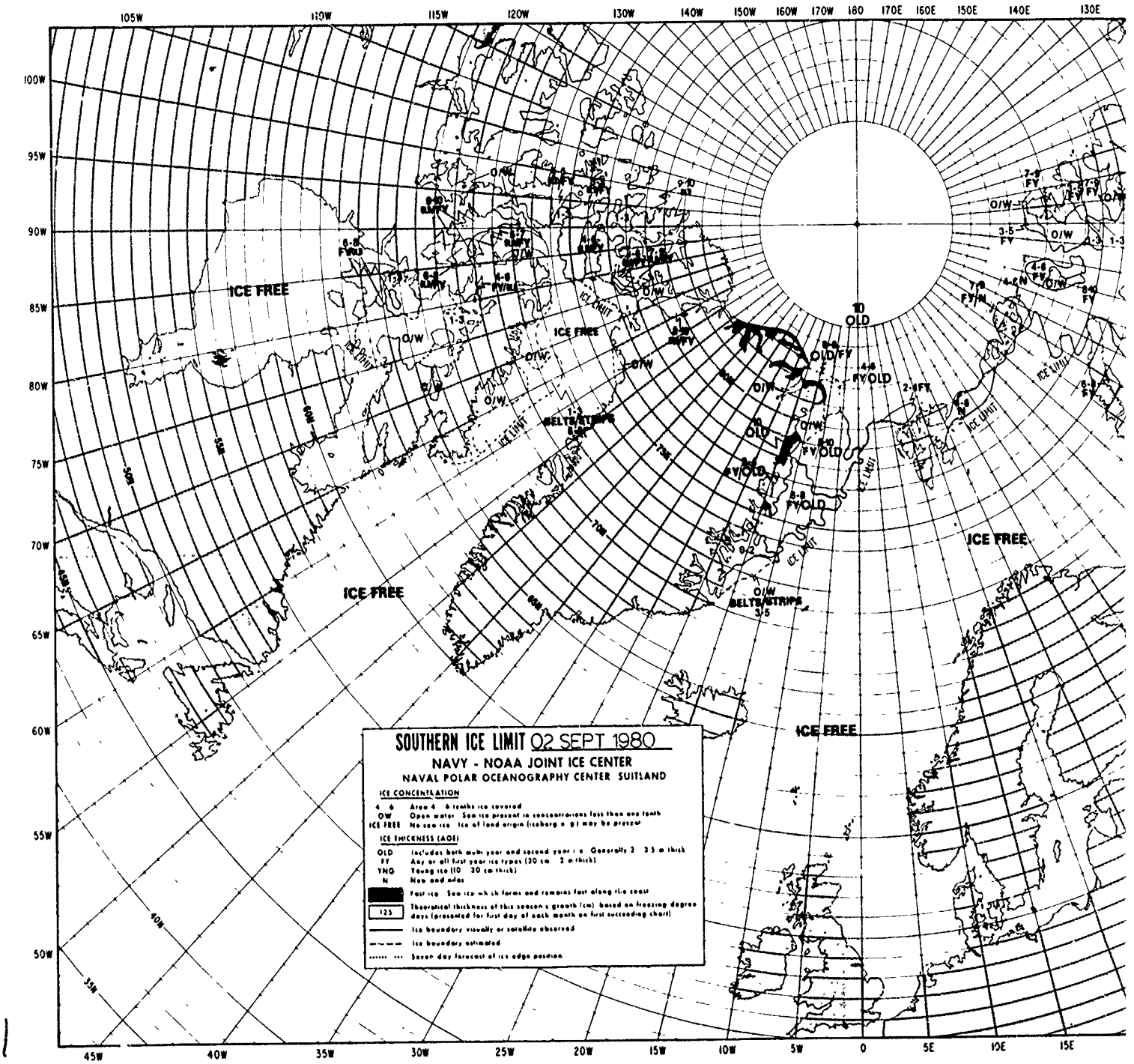
70E
65E
60E
55E
50E
45E
10W
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
10
OLD
ICE FREE
ICE FREE
ICE LIMIT
O/W
FY/OLD
FY
1-3
4-6
5-7
7-9
2-4
3-5
4-6
FY
OLD
75N
70N
65N
60N
55N
50N
45N
40N

2


105W
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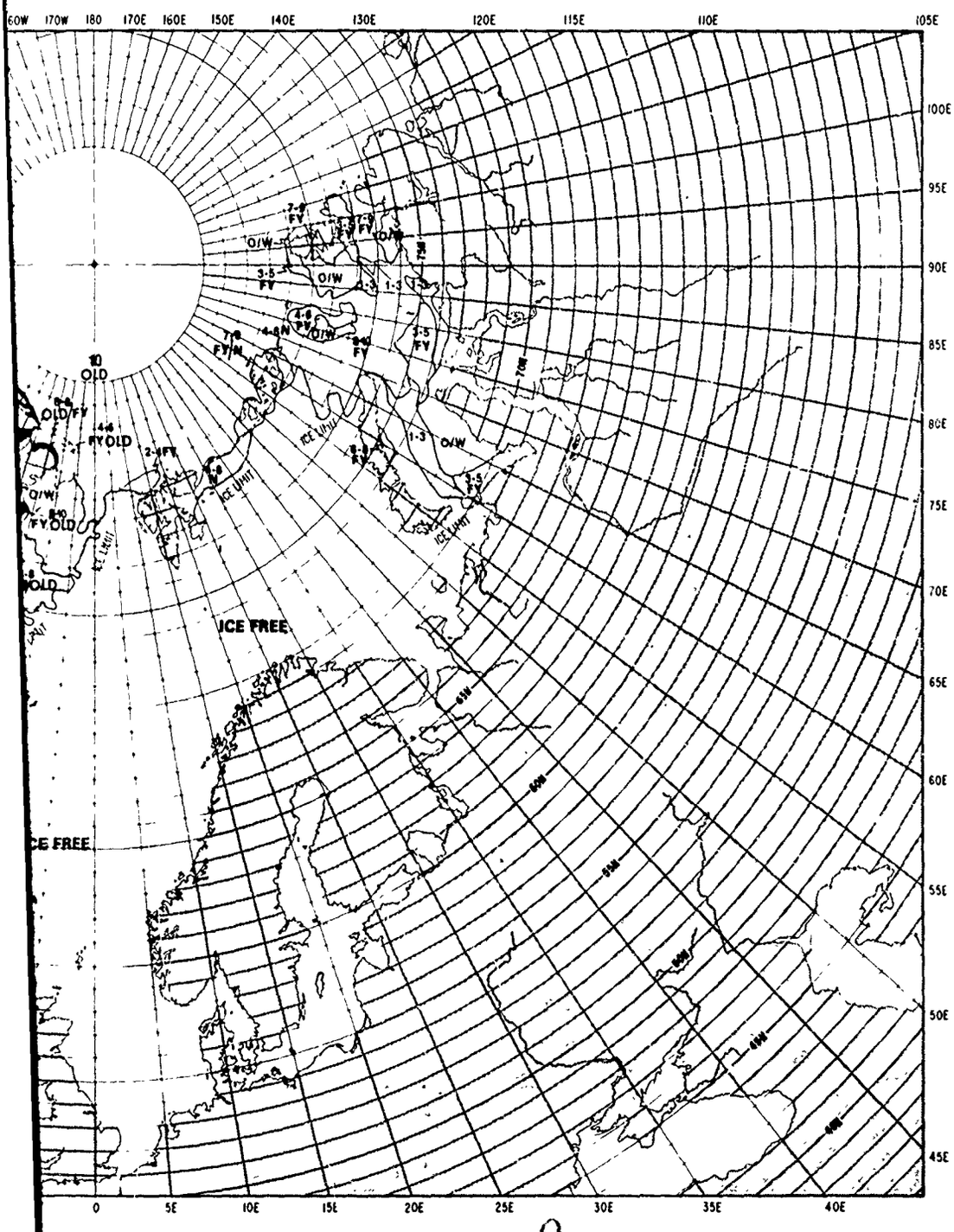
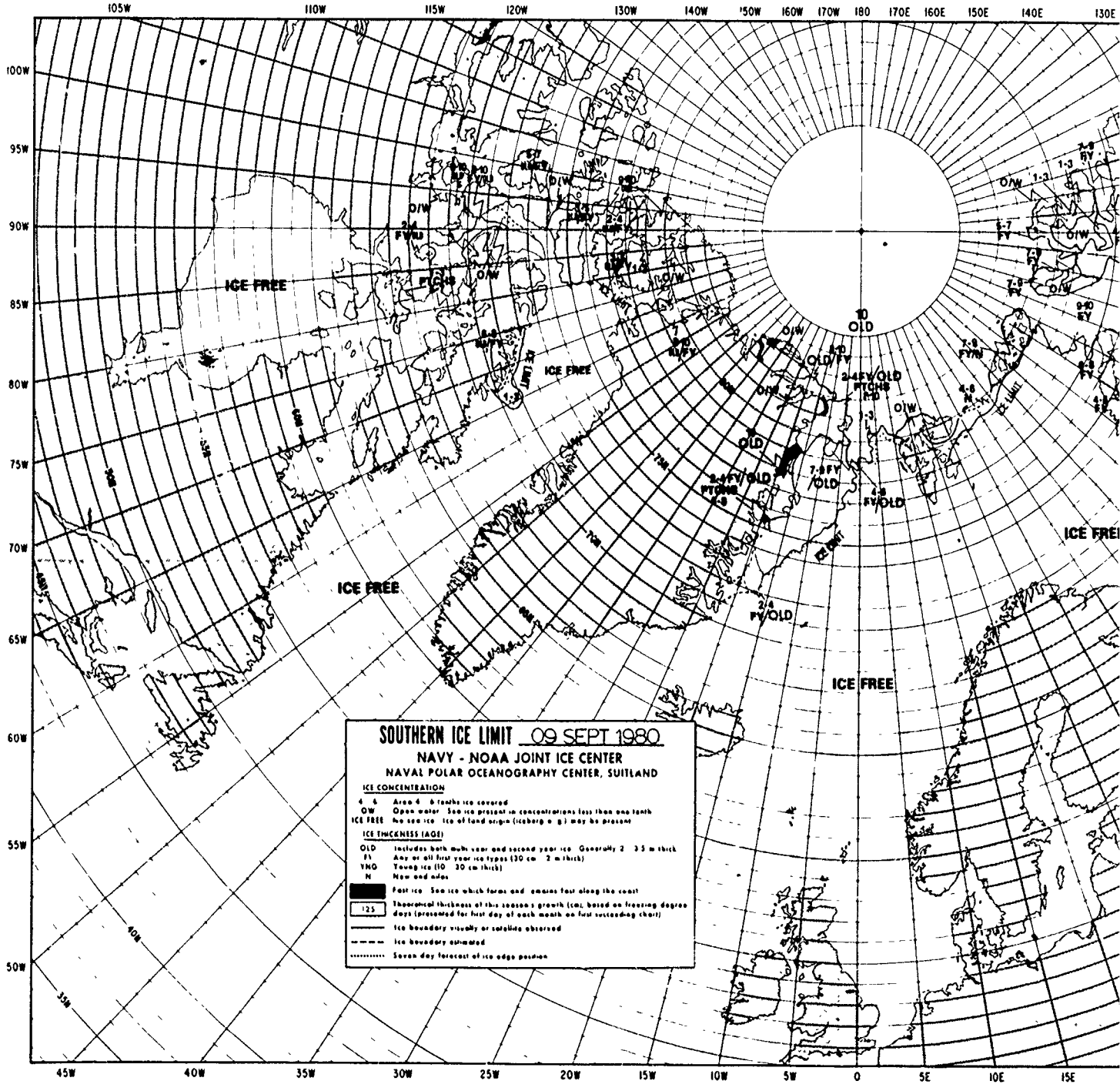
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
ICE FREE
O/W
ICE LIMIT
10 OLD
SOUTHERN ICE LIMIT 02 SEPT 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year i e Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position



60W 170W 180 170E 160E 150E 140E 130E 120E 115E 110E 105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
0 5E 10E 15E 20E 25E 30E 35E 40E
ICE FREE
ICE LIMIT
O/W
3-5 FY
1-3
OLD
FY OLD

2


SOUTHERN ICE LIMIT 09 SEPT 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm), based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
ICE FREE
ICE FREE
ICE FREE
ICE FREE
ICE FREE
10 OLD
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
130E
100W
95W
90W
85W
80W
75W
70W
65W
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45W
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30W
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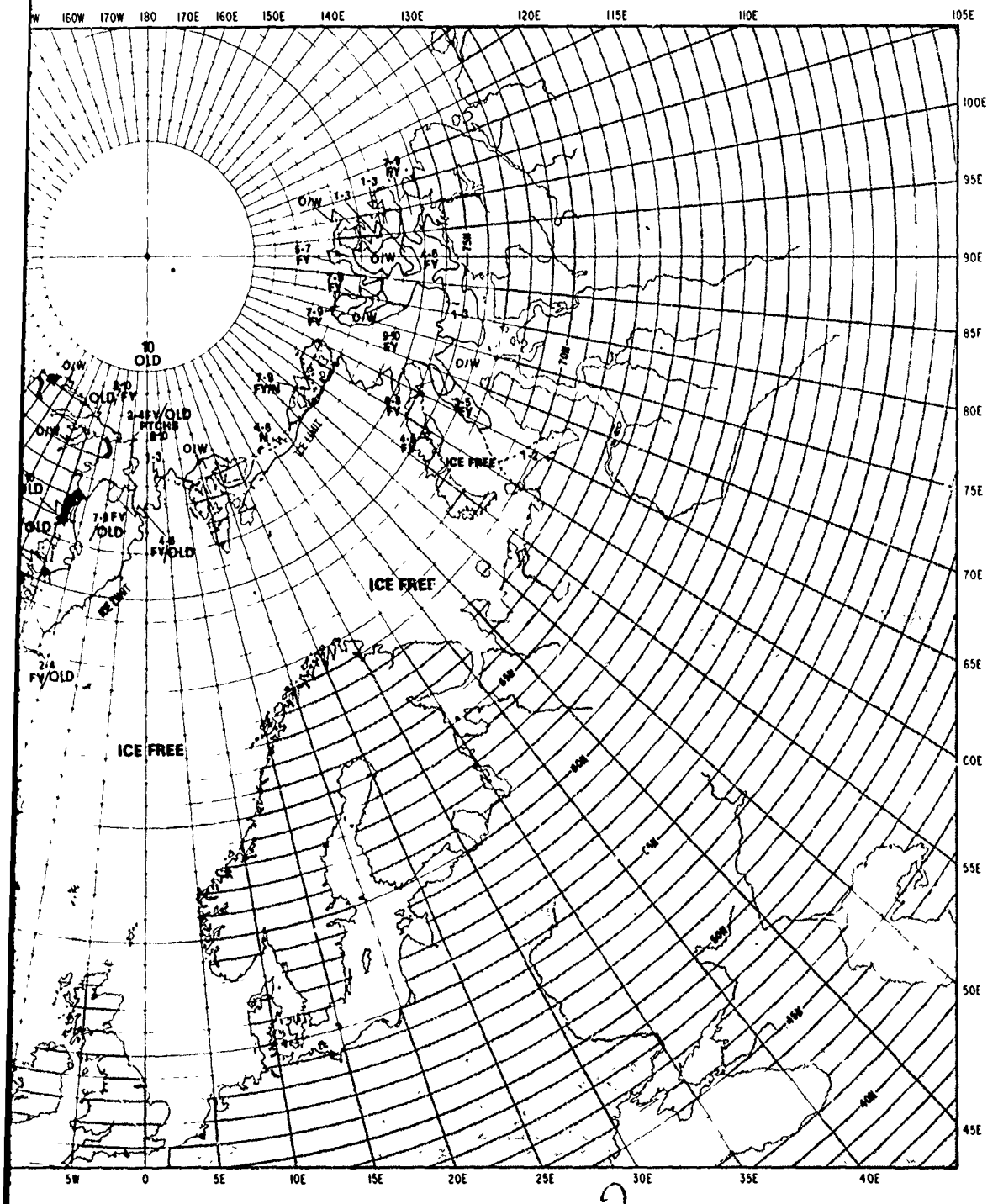
10W
5W
0
5E
10E
15E


160W
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70E
65E
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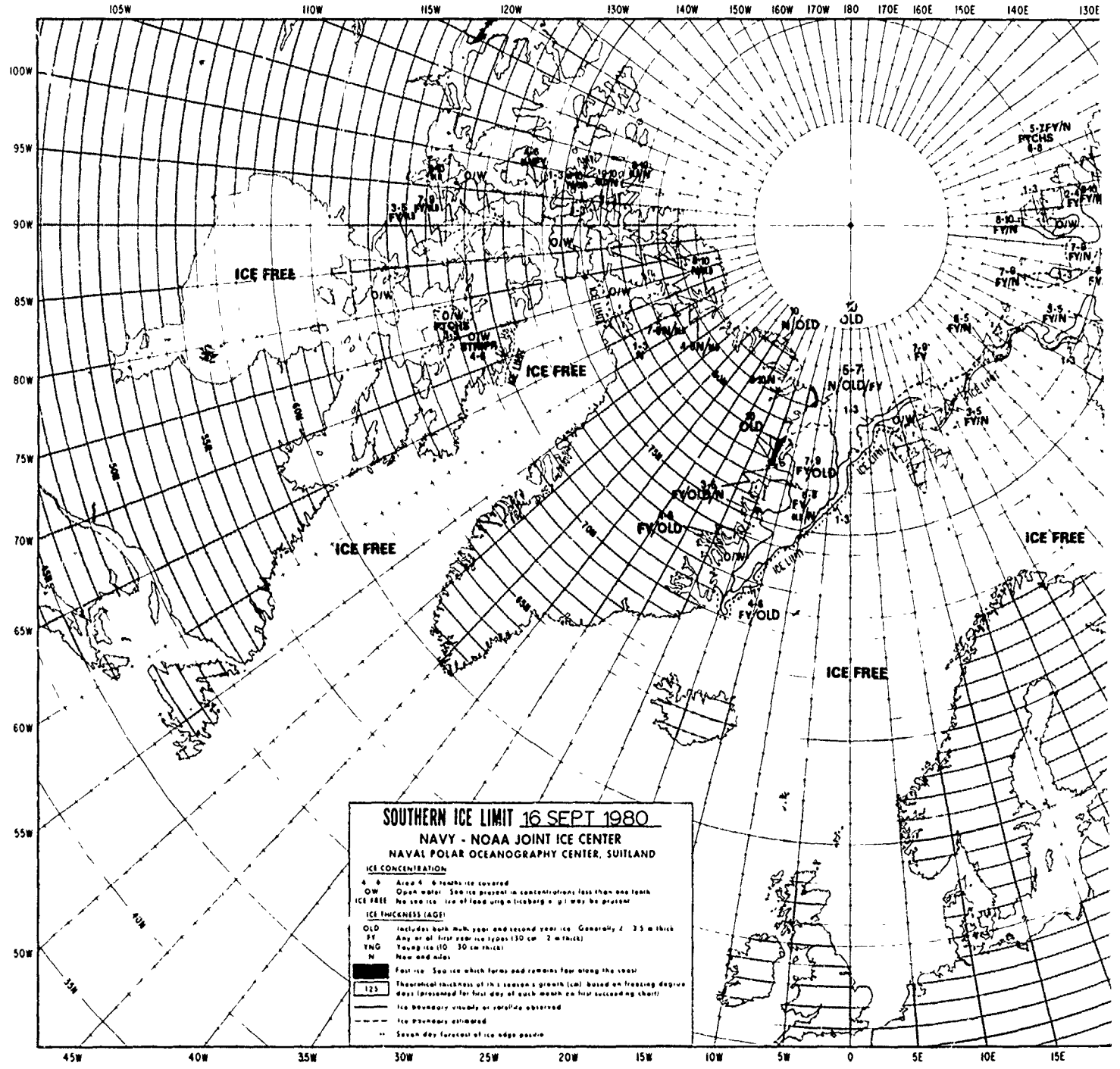
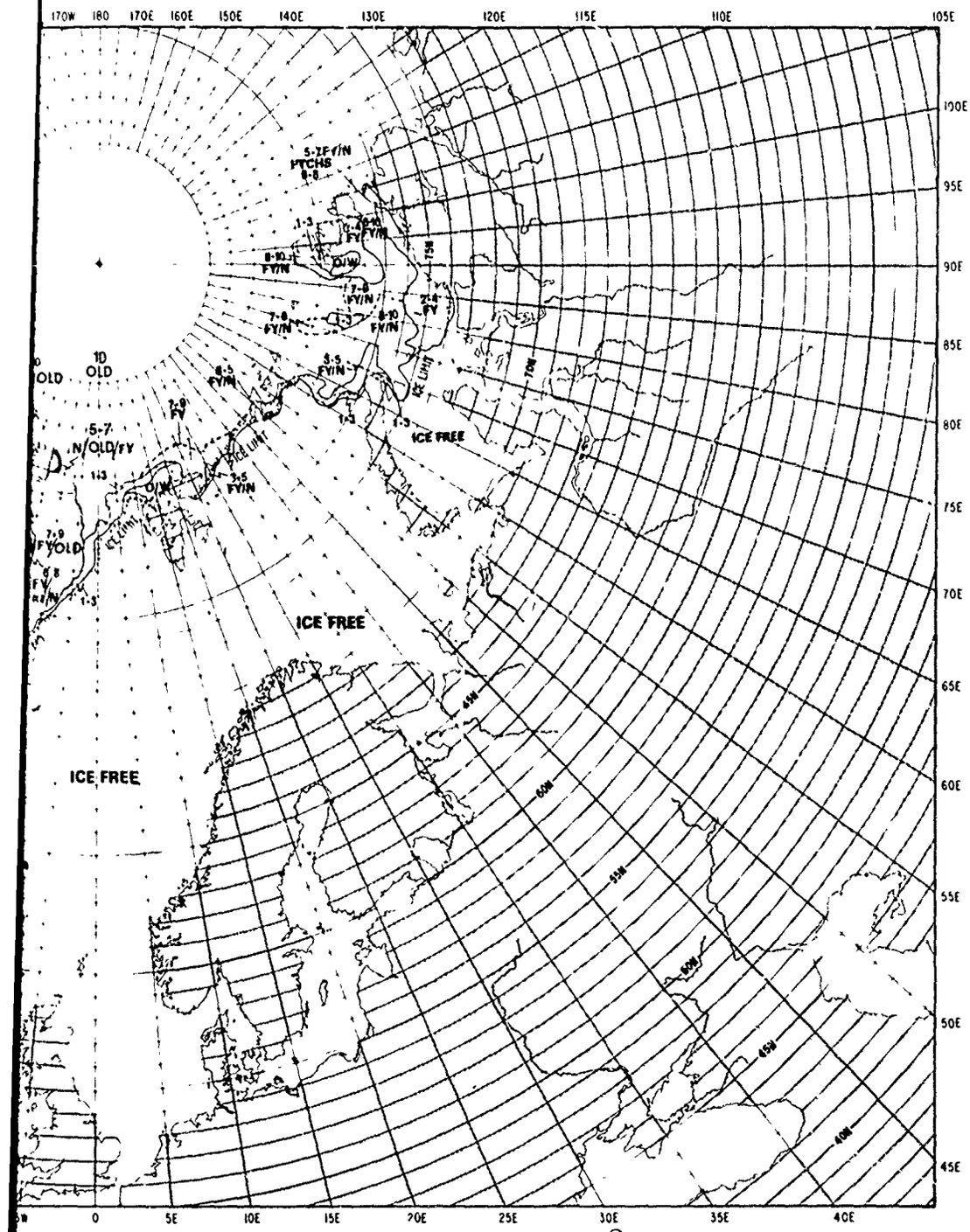
55E
50E
45E
40E
5W
0
5E
10E
15E
20E
25E
30E
35E
10
OLD
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
ICE LIMIT
O/W
1-3
7-9 FV
4-6 FV
7-9 FV/N
9-10 FY
2-4 FY/OLD PITCHS 8-10
7-9 FV/OLD
4-6 FV/OLD
2-4 FY/OLD
1-2
1-2
1-2


SOUTHERN ICE LIMIT 16 SEPT 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3.5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
ICE FREE
ICE FREE
ICE FREE
ICE FREE
ICE FREE
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
130E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E



170W
180
170E
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130E
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115E
110E
105E
100E
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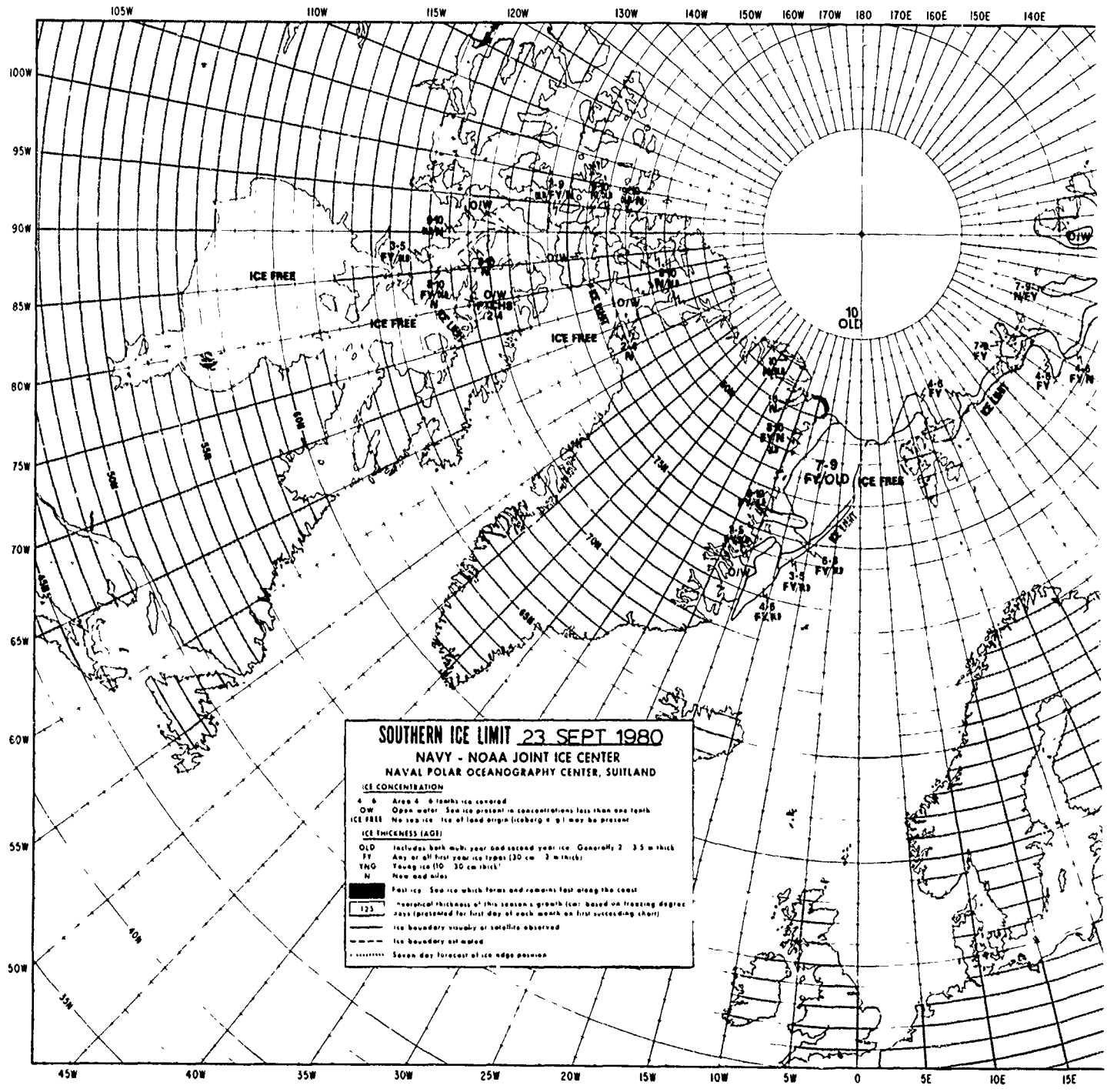
0
5E
10E
15E
20E
25E
30E
35E
40E
5-7FY/N
PTCHS
8-8
1-3
8-10
FY/N
O/W
7-9
FY/N
7-8
FY/N
8-10
FY/N
2-4
FY
3-5
FY/N
8-5
FY/N
7-9
FY
5-7
N/OLD/FY
1-3
O/W
3-5
FY/N
7-9
FY/OLD
8-8
FY/N
1-3
10
OLD
OLD
ICE LIMIT
ICE FREE
ICE FREE
ICE FREE
75N
70N
45N
60N
55N
60N
45N
40N

2


105W
110W
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130W
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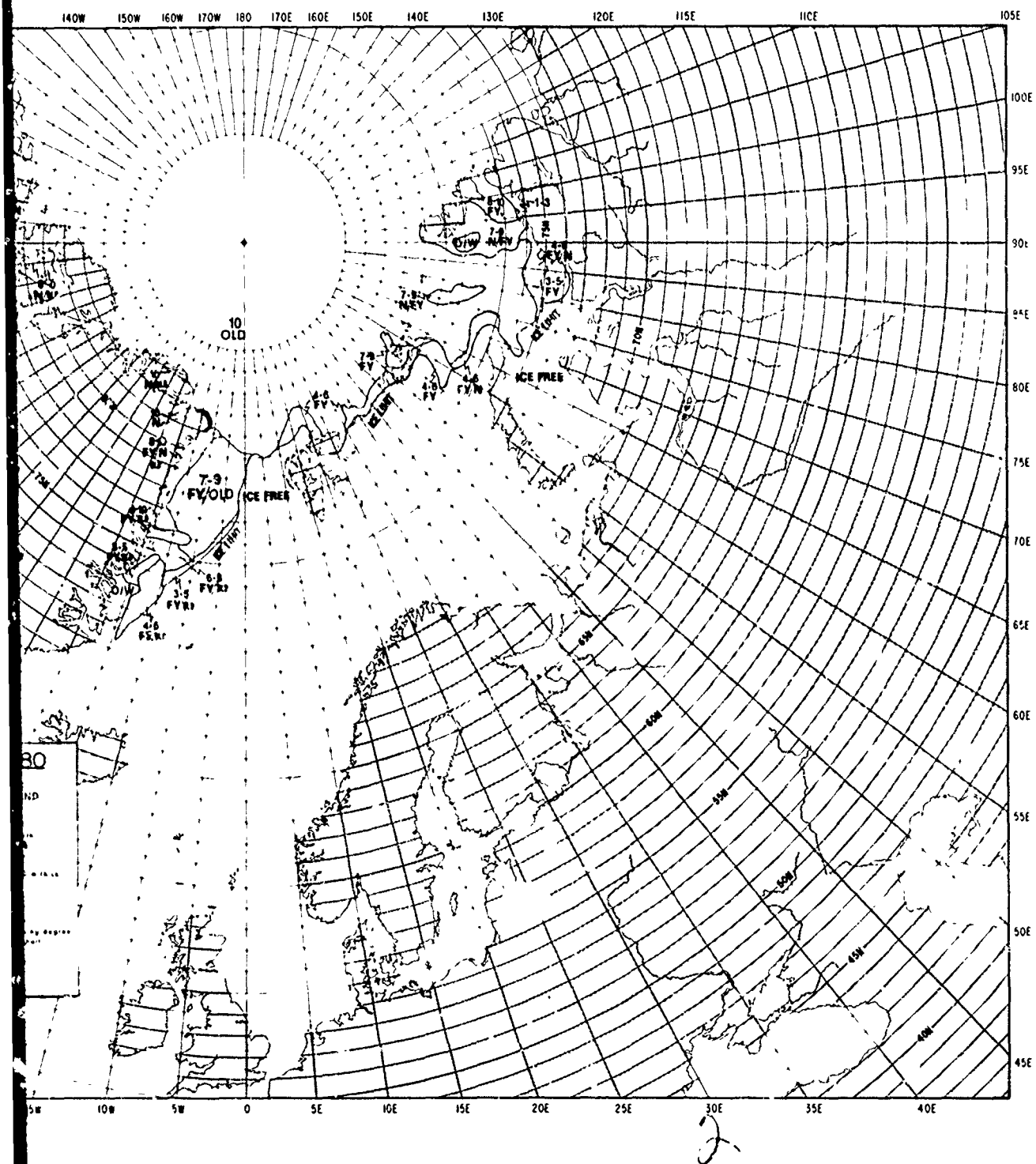
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
ICE FREE
O/W
7-9 FY/OLD
ICE LIMIT
SOUTHERN ICE LIMIT 23 SEPT 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
OLD
FY
YNG
N
Fast ice
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position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25E
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35E
40E
10
OLD
7-9
FY/OLD
ICE FREE
ICE FREE
O/W
O/W
7-9
N/FY
4-6
FY
3-5
FY
4-6
FY/N
3-5
FY
6-8
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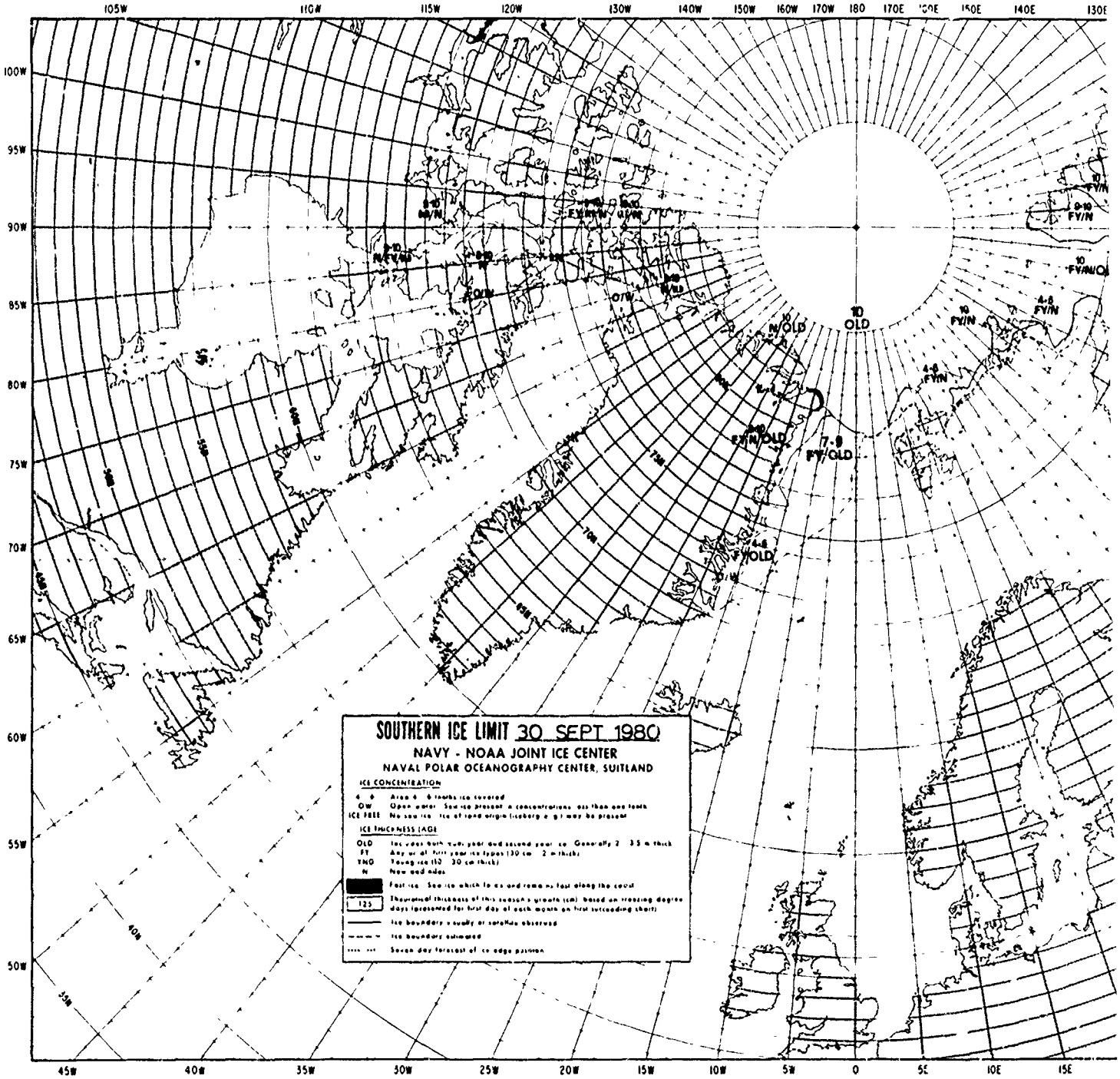
55N
50N
45N
40N


105W
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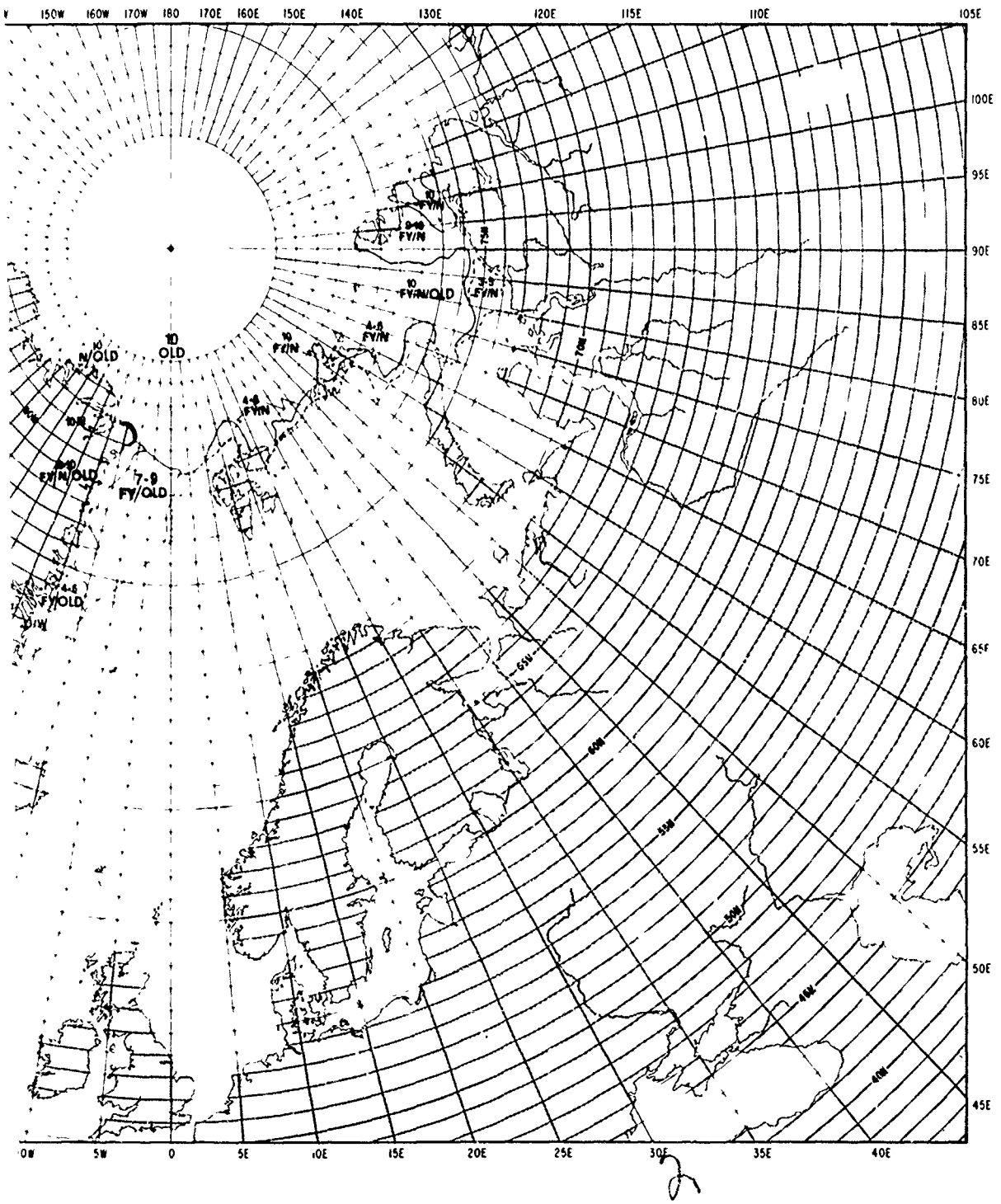
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
10 OLD
7-8 FY/OLD
SOUTHERN ICE LIMIT 30 SEPT 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
OW Open water
ICE FREE
ICE THICKNESS / AGE
OLD
FY
YNG
N
Fast ice
Ice boundary usually or sometimes observed
Ice boundary estimated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180
170E
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120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
10 OLD
10 FY/OLD
7-9 FY/OLD
4-6 FY/OLD
10 FY/IN
4-6 FY/IN
10 FY/IN/OLD
7-9 FY/IN
0W
5W
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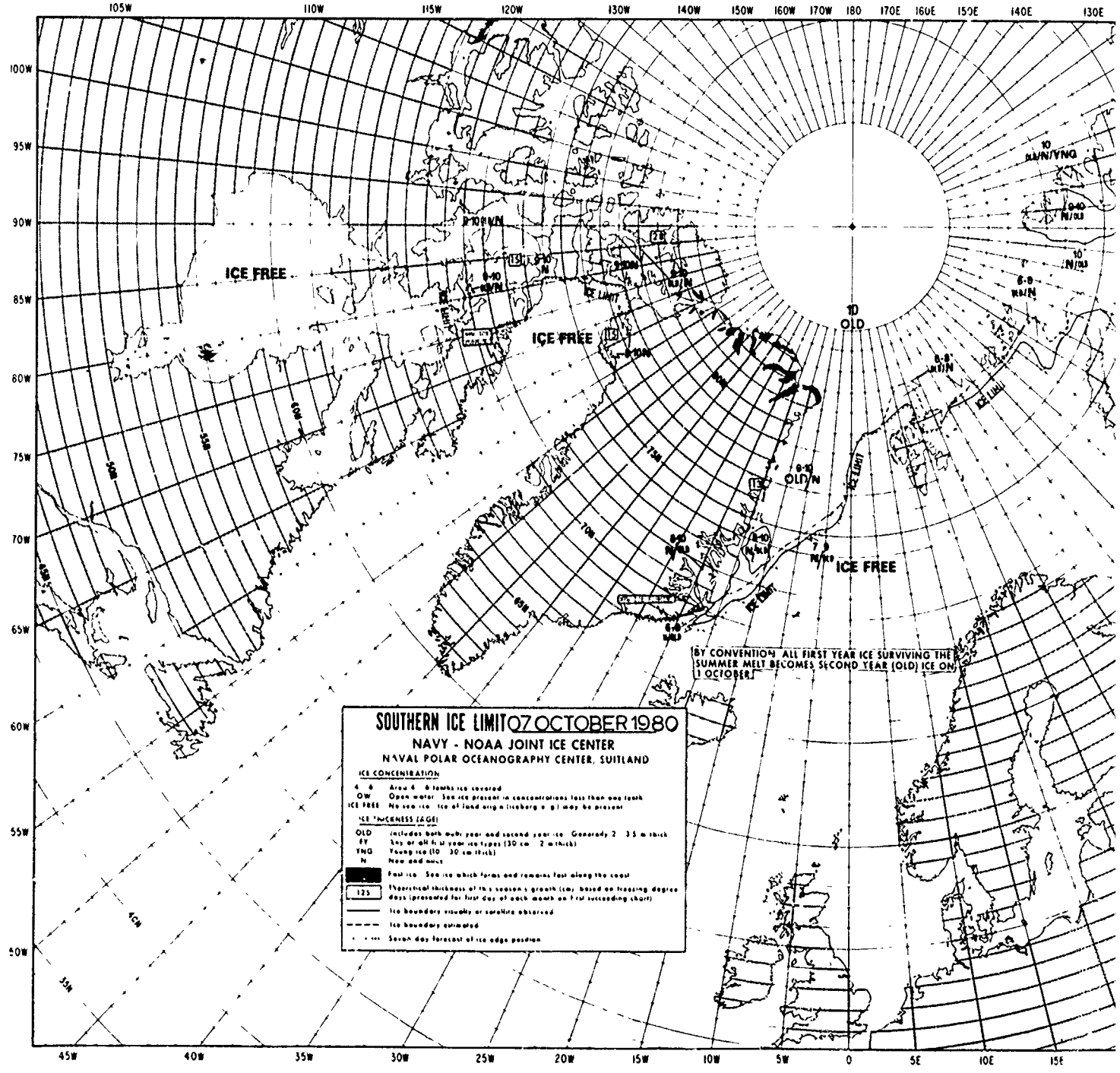
15E
20E
25E
30E
35E
40E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180
170E
160E
150E
140E
130E
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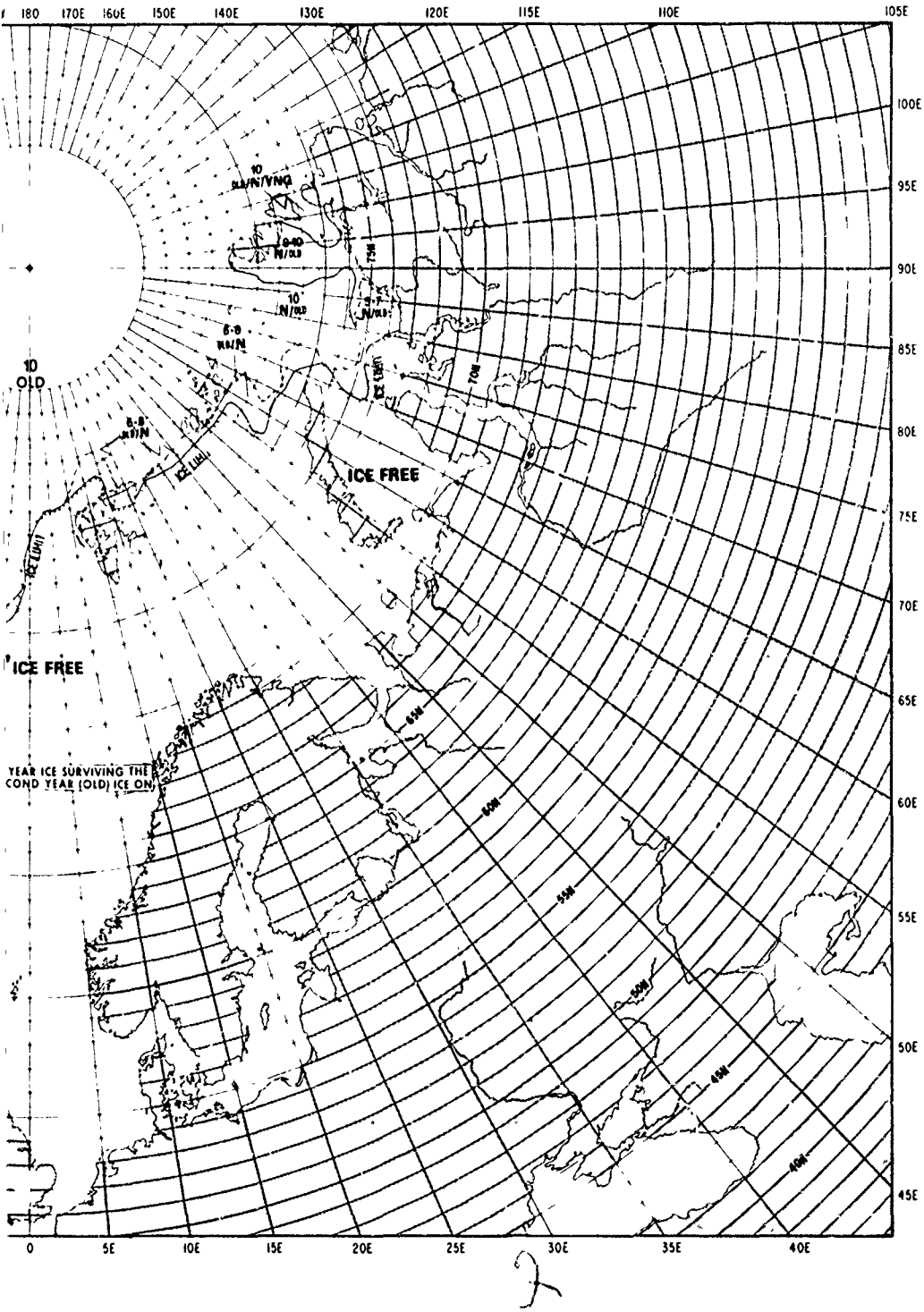
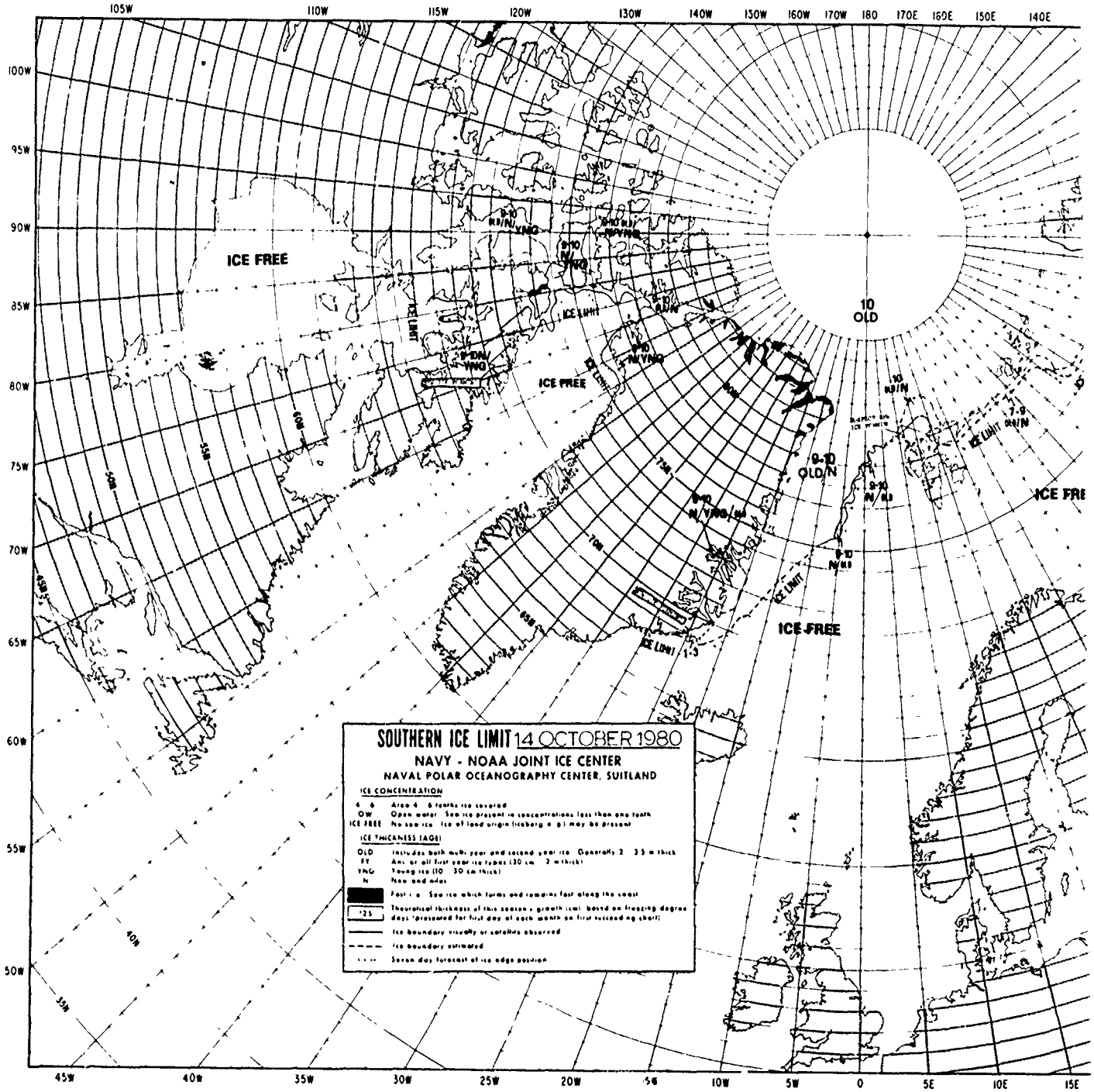
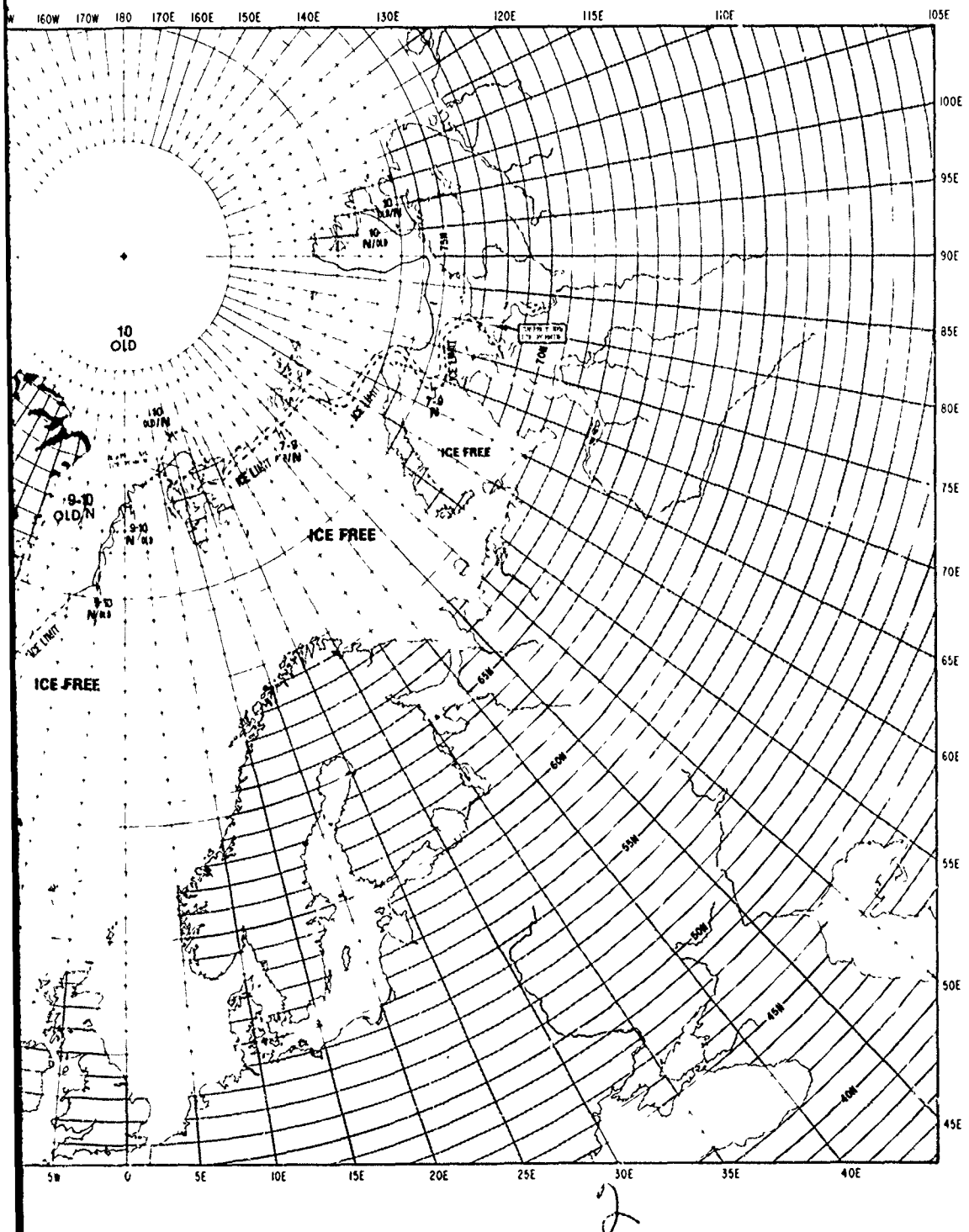
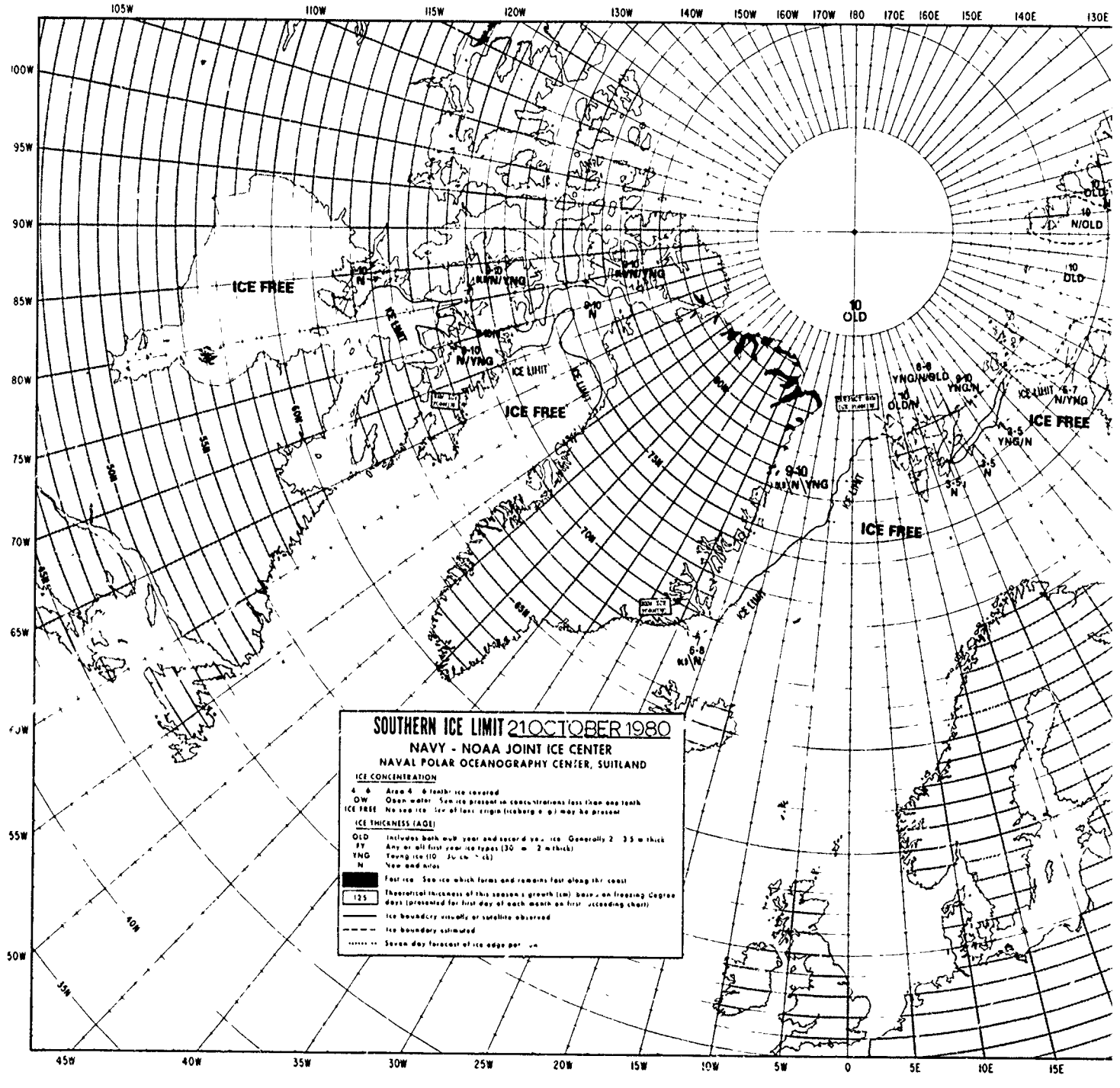
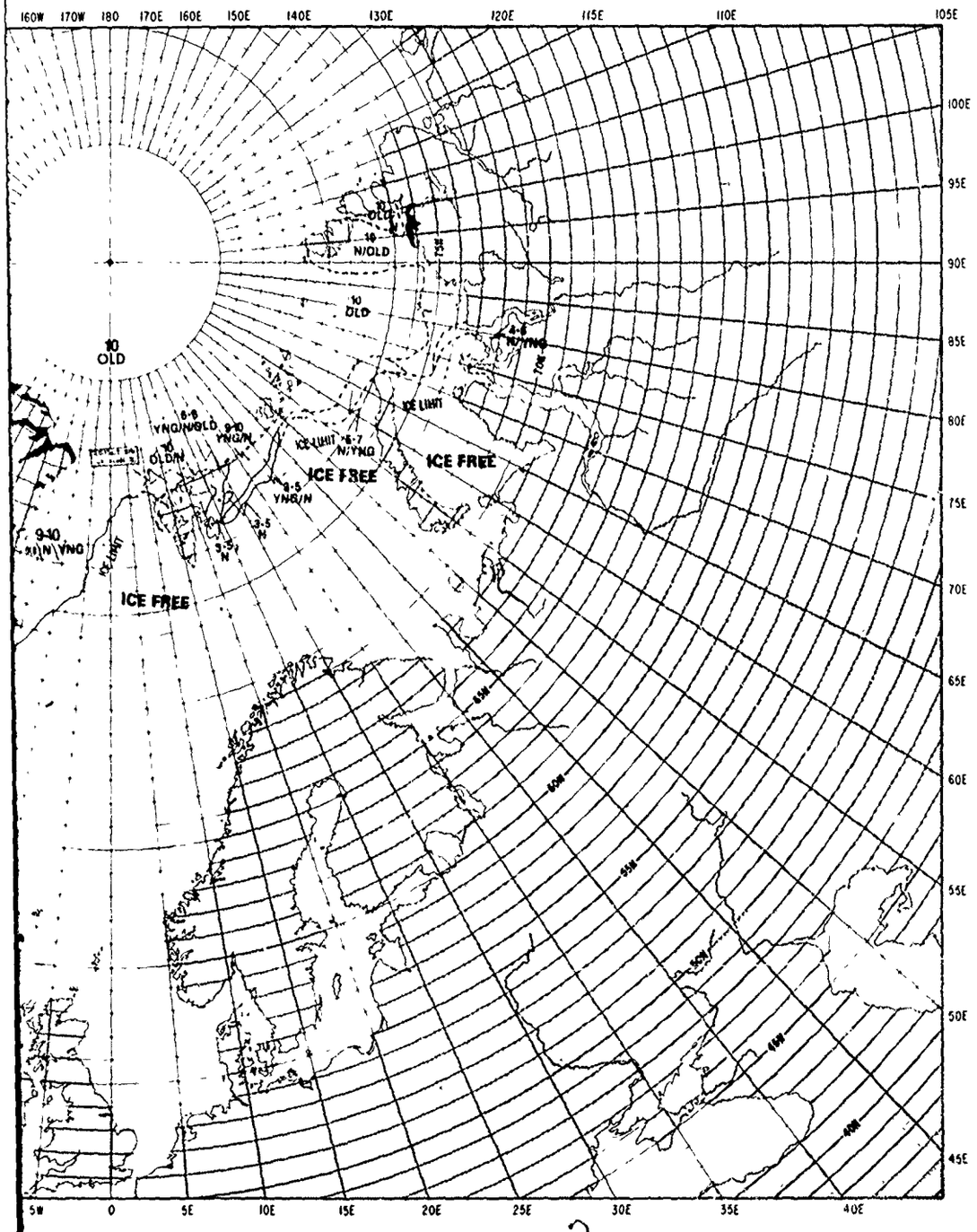
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
ICE FREE
ICE FREE
ICE FREE
10 OLD
10 OLD/N/YNG
OLD/N
ICE LIMIT
BY CONVENTION ALL FIRST YEAR ICE SURVIVING THE SUMMER MELT BECOMES SECOND YEAR (OLD) ICE ON 1 OCTOBER
SOUTHERN ICE LIMIT 07 OCTOBER 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Say or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice See ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (processed for first day of each month on final succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position


180
170E
160E
150E
140E
130E
120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
0
5E
10E
15E
20E
25E
30E
35E
40E
10
OLD
ICE FREE
ICE FREE
ICE LIMIT
ICE LIMIT
YEAR ICE SURVIVING THE
COND YEAR (OLD) ICE ON


105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
10W
5W
0
5E
10E
15E
ICE FREE
ICE LIMIT
10 OLD
9-10 OLD/N
ICE FREE
ICE FREE
ICE LIMIT 1-3
SOUTHERN ICE LIMIT 14 OCTOBER 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
6 9 Area 6 9 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast i e Sea ice which forms and remains fast along the coast
*25 Theoretical thickness of this season s growth (cm) based on freezing degree days (processed for first day of each month on first succeeding chart)
Ice boundary mostly or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position

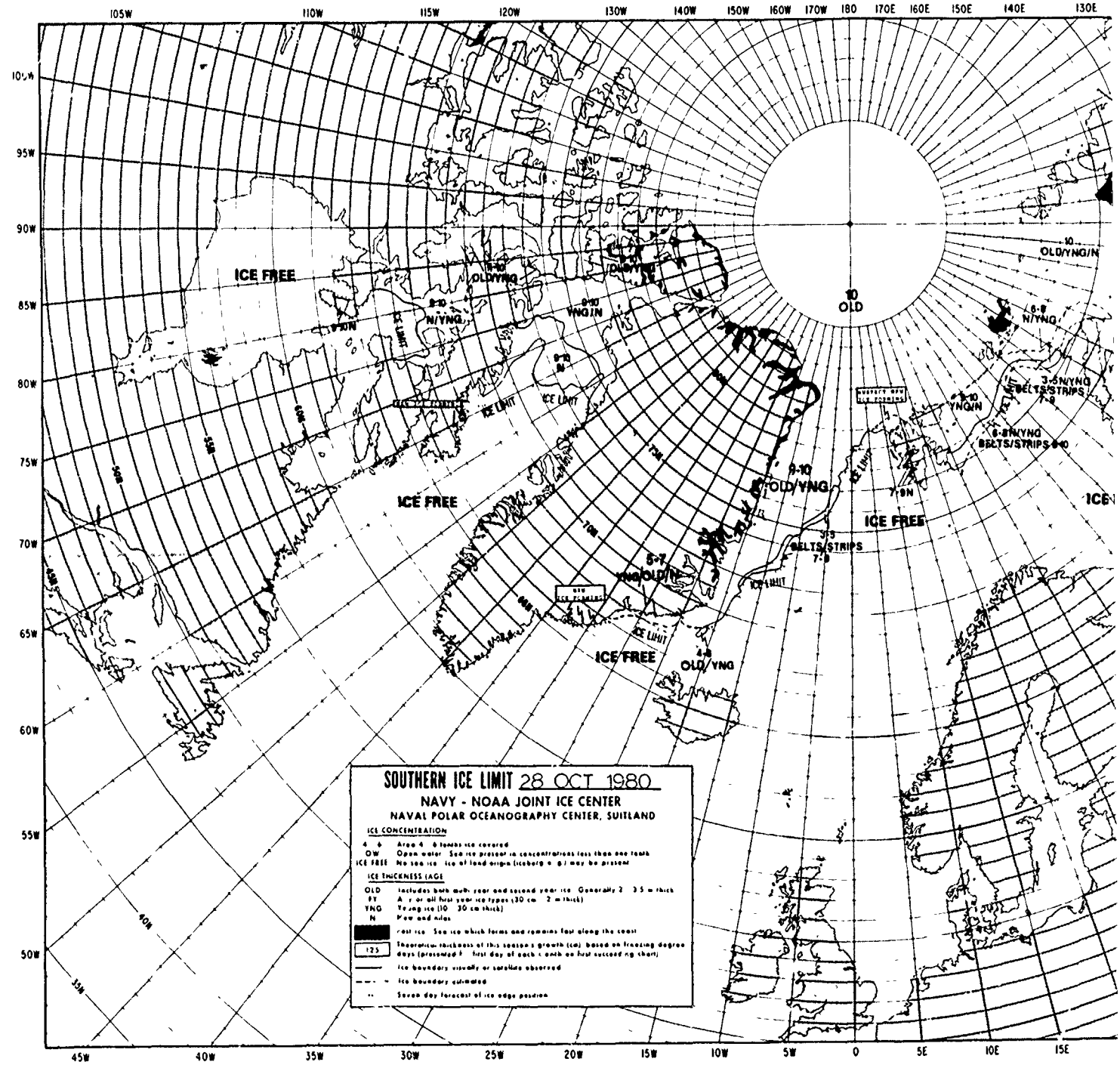

160W
170W
180
170E
160E
150E
140E
130E
120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
40E
35E
30E
25E
20E
15E
10E
5E
0
5W
10
OLD
9-10
OLD/N
9-10
N/OLD
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
ICE LIMIT
ICE LIMIT
ICE LIMIT
70N
65N
60N
55N
50N
45N
40N

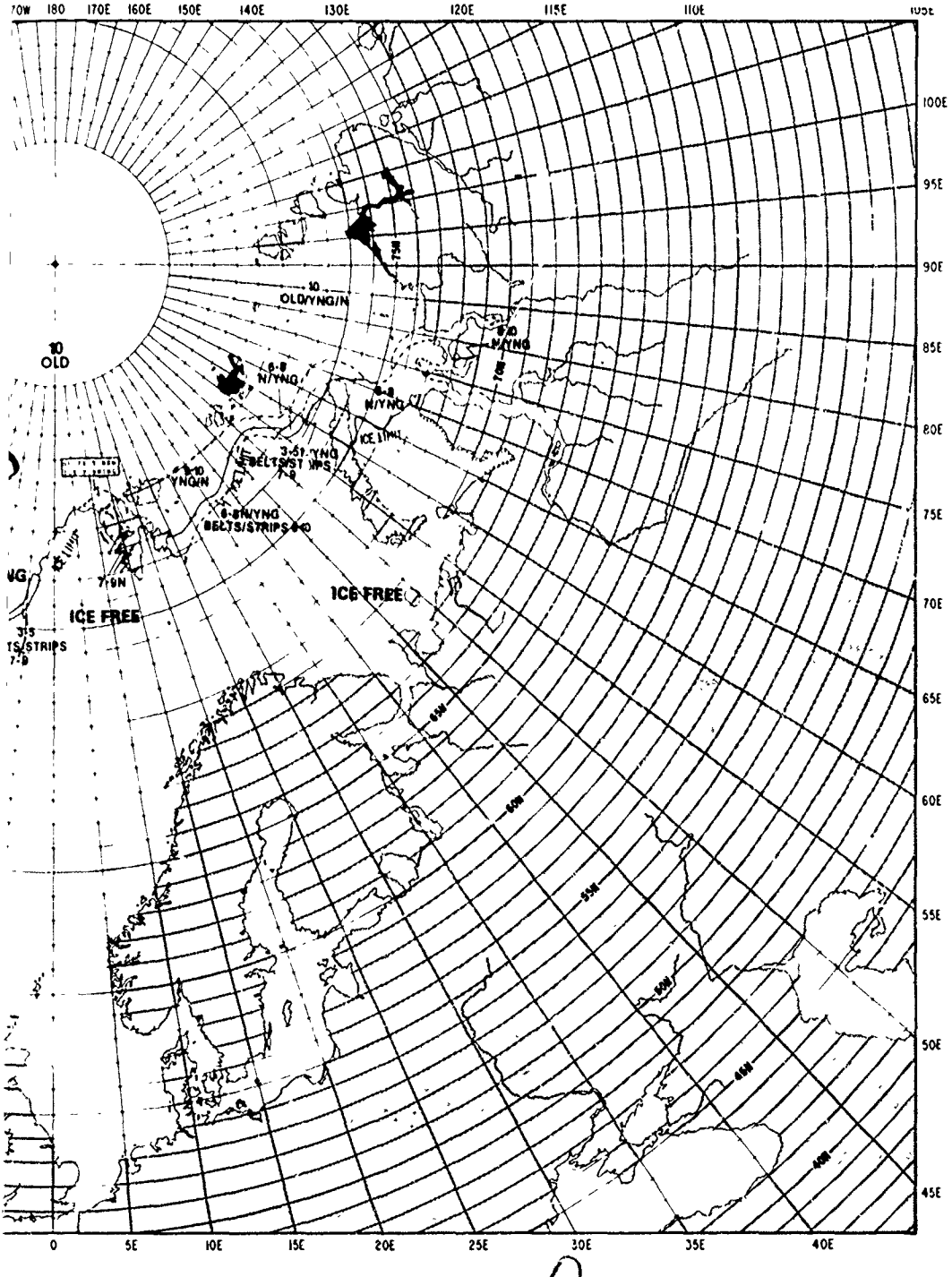

SOUTHERN ICE LIMIT 21 OCTOBER 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Sea of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 m 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
ICE FREE
ICE LIMIT
10 OLD
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
130E
100W
95W
90W
85W
80W
75W
70W
65W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E



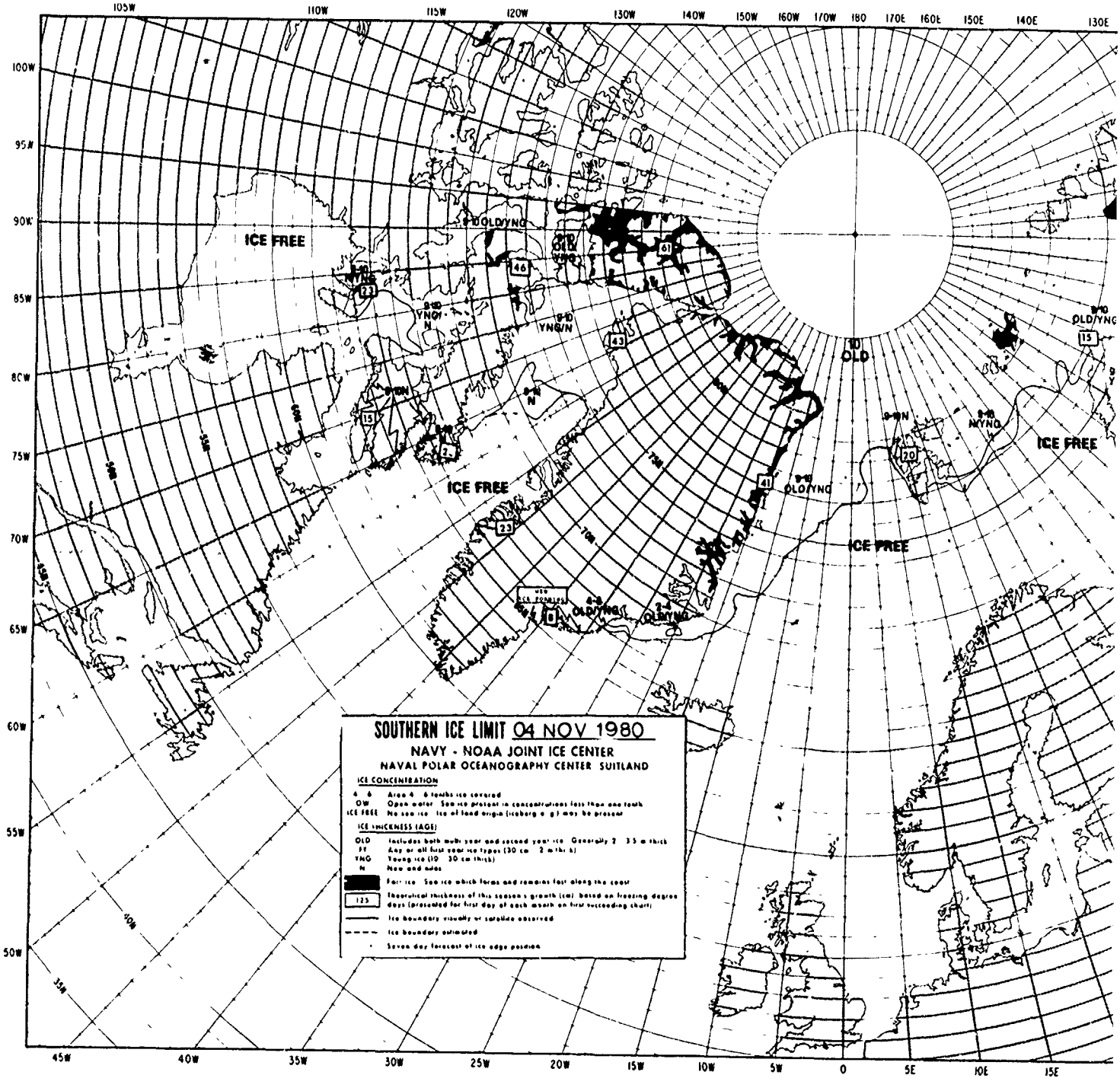
160W
170W
180
170E
160E
150E
140E
130E
120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
10 OLD
10 N/OLD
10 OLD
4-6 N/YNG
ICE LIMIT
6-8 YNG/N/OLD
9-10 YNG/N
10 OLD/N
ICE LIMIT
6-7 N/YNG
ICE FREE
ICE FREE
3-5 YNG/N
3-5 N
3-5 N
9-10 N/YNG
ICE LIMIT
ICE FREE

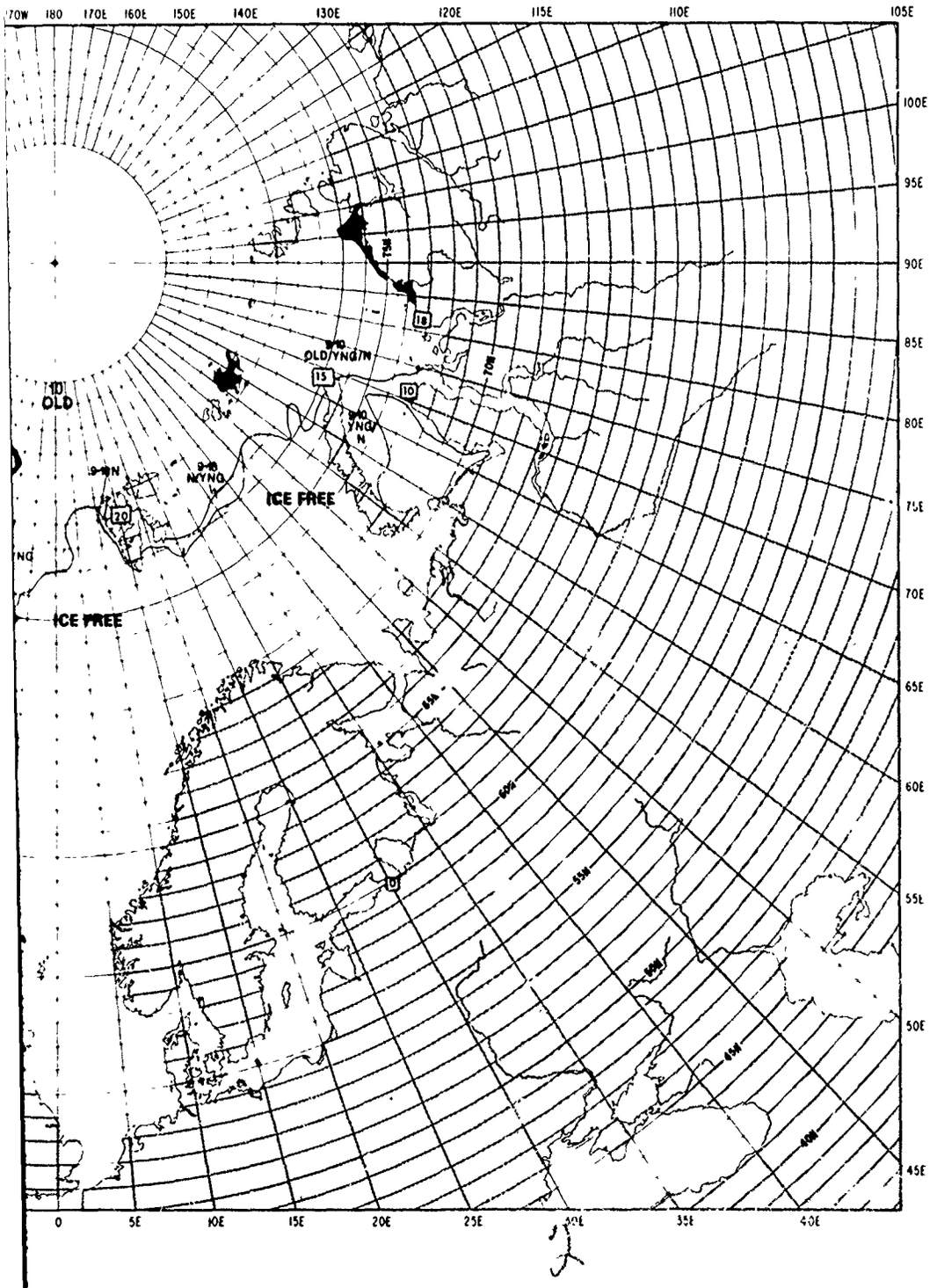
2


105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
130E
105W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
ICE FREE
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
10 OLD
10 OLD/YNG/N
8-10 OLD/YNG
8-10 N/YNG
8-10 YNG/N
8-10 N
6-8 N/YNG
3-5 N/YNG BELTS/STRIPS 7-9
6-8 N/YNG BELTS/STRIPS 8-10
8-10 OLD/YNG
7-9N
3-5 BELTS/STRIPS 7-9
5-7 YNG/OLD/N
4-6 OLD/YNG
SOUTHERN ICE LIMIT 28 OCT 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
MY A r or all four year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Coast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (processed 1 first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position

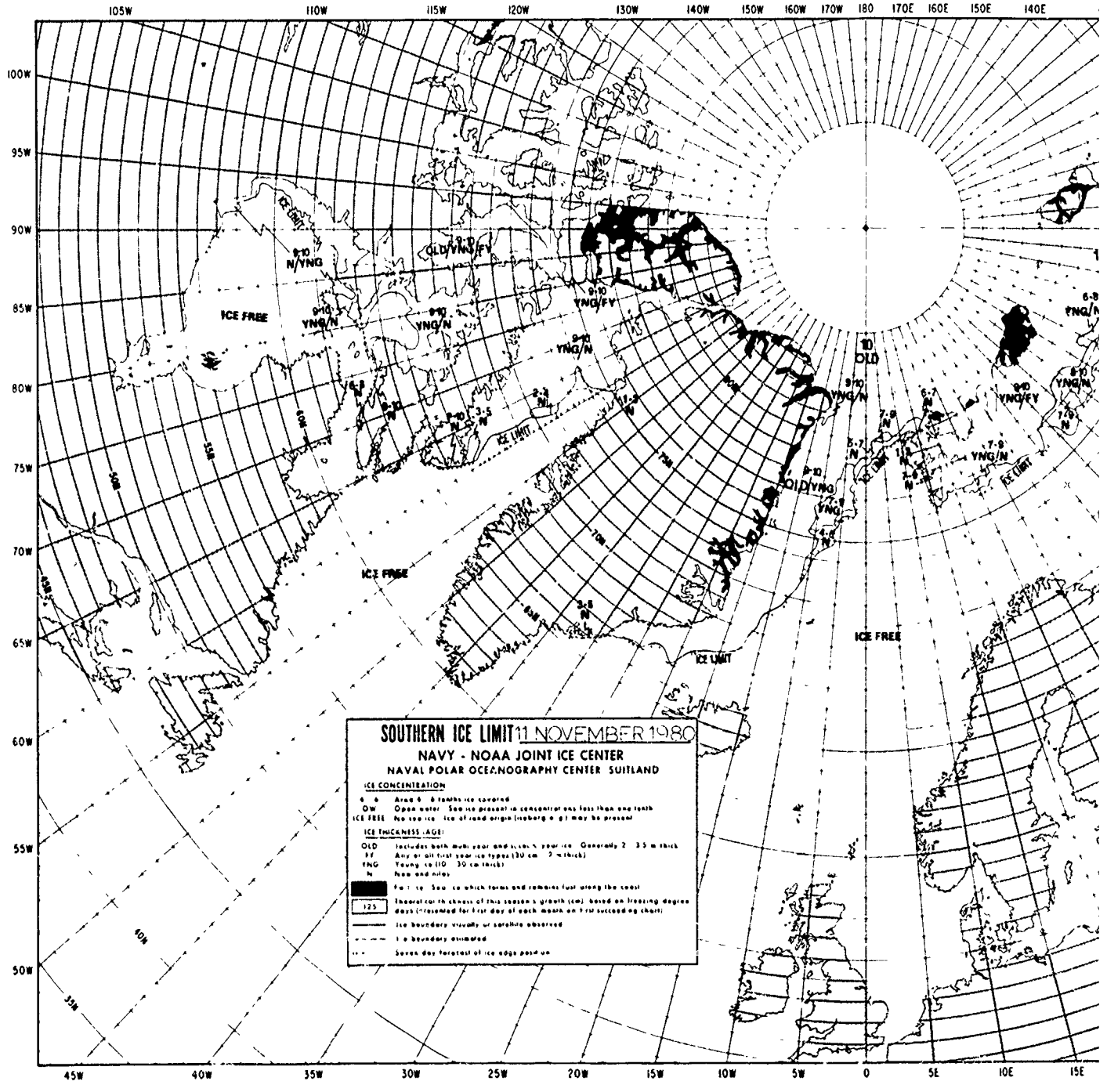

70W
180
170E
160E
150E
140E
130E
120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
0
5E
10E
15E
20E
25E
30E
35E
40E
10
OLD
10
OLD/YNG/N
8-9
N/YNG
8-9
N/YNG
8-10
P/YNG
ICE LIMIT
3-5/7 YNG
BELTS/STRIPS
7-9
8-10
YNG/N
6-8N/YNG
BELTS/STRIPS 8-10
ICE LIMIT
7-9N
ICE FREE
ICE FREE
3-5
TS/STRIPS
7-9

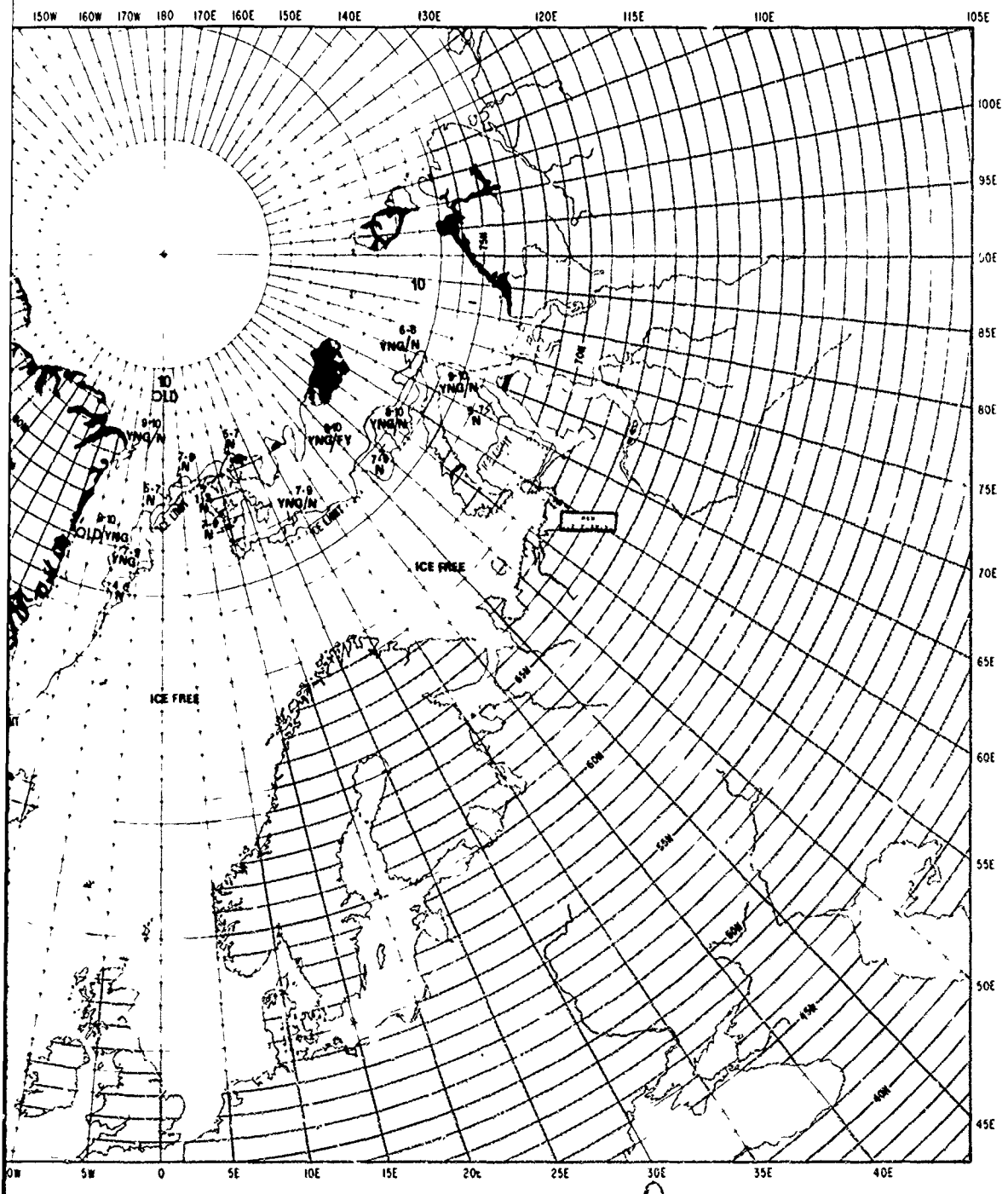
2

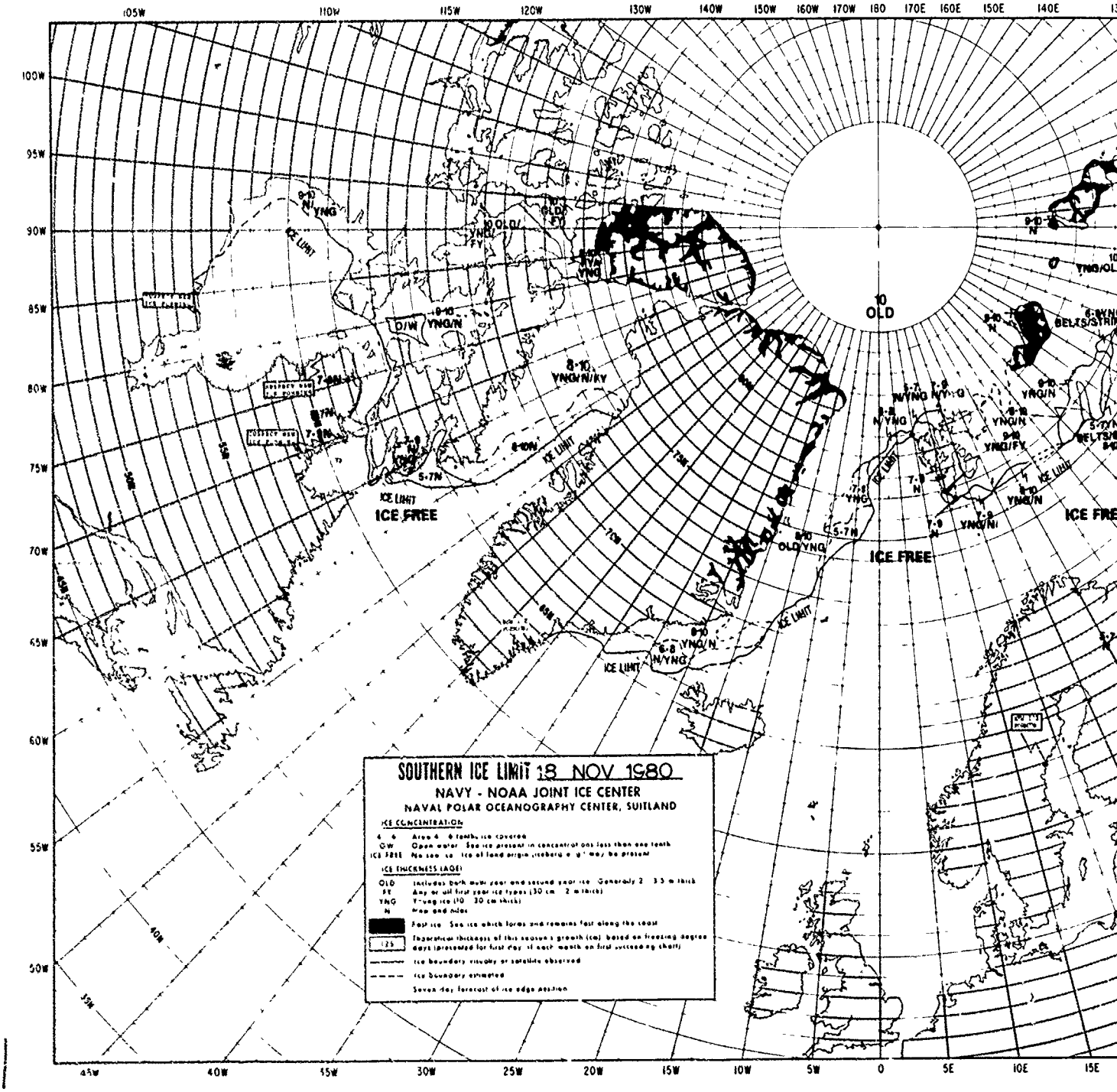

105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
130E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
ICE FREE
ICE FREE
ICE FREE
ICE FREE
ICE FREE
SOUTHERN ICE LIMIT 04 NOV 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (proceeded for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position

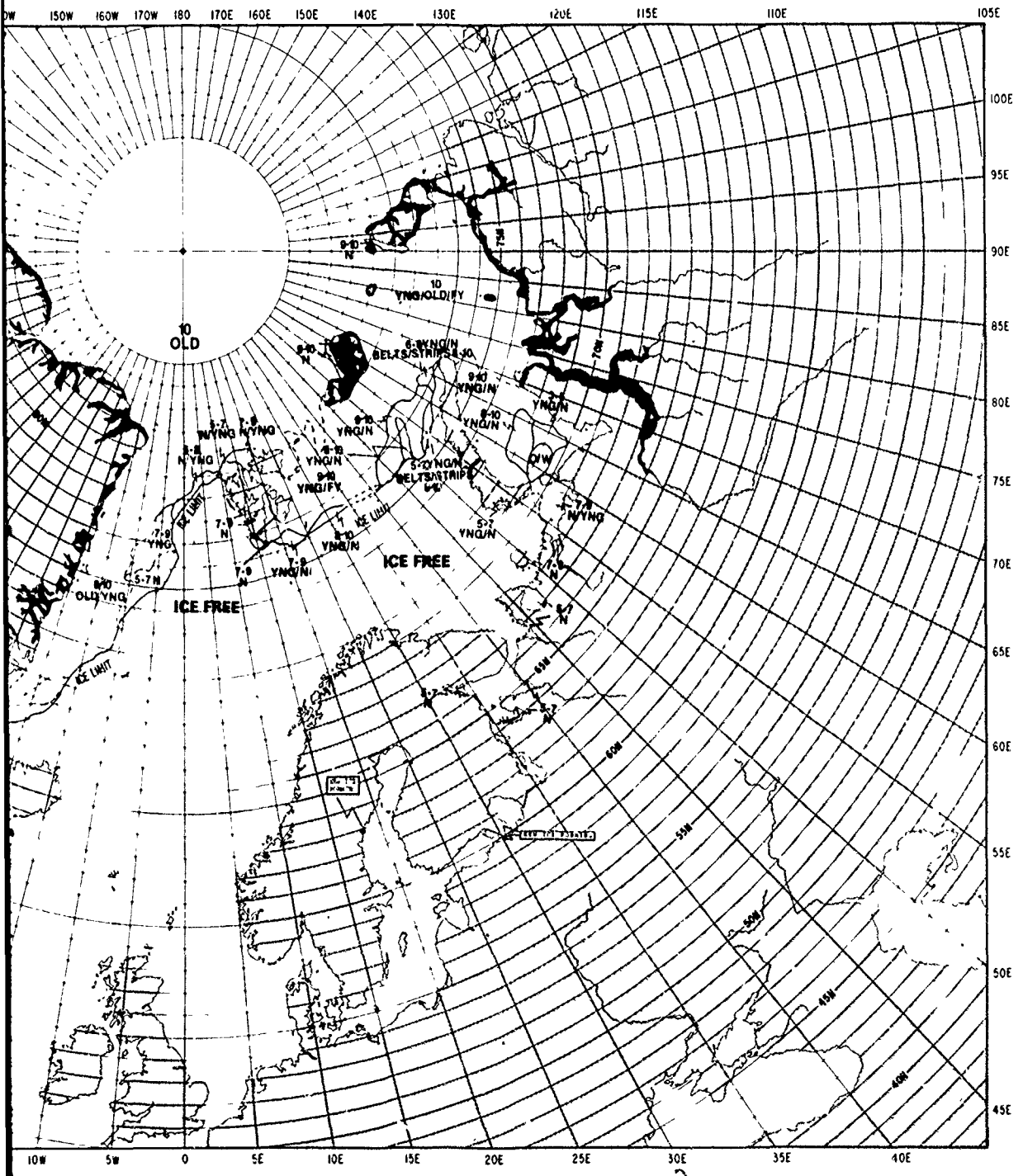


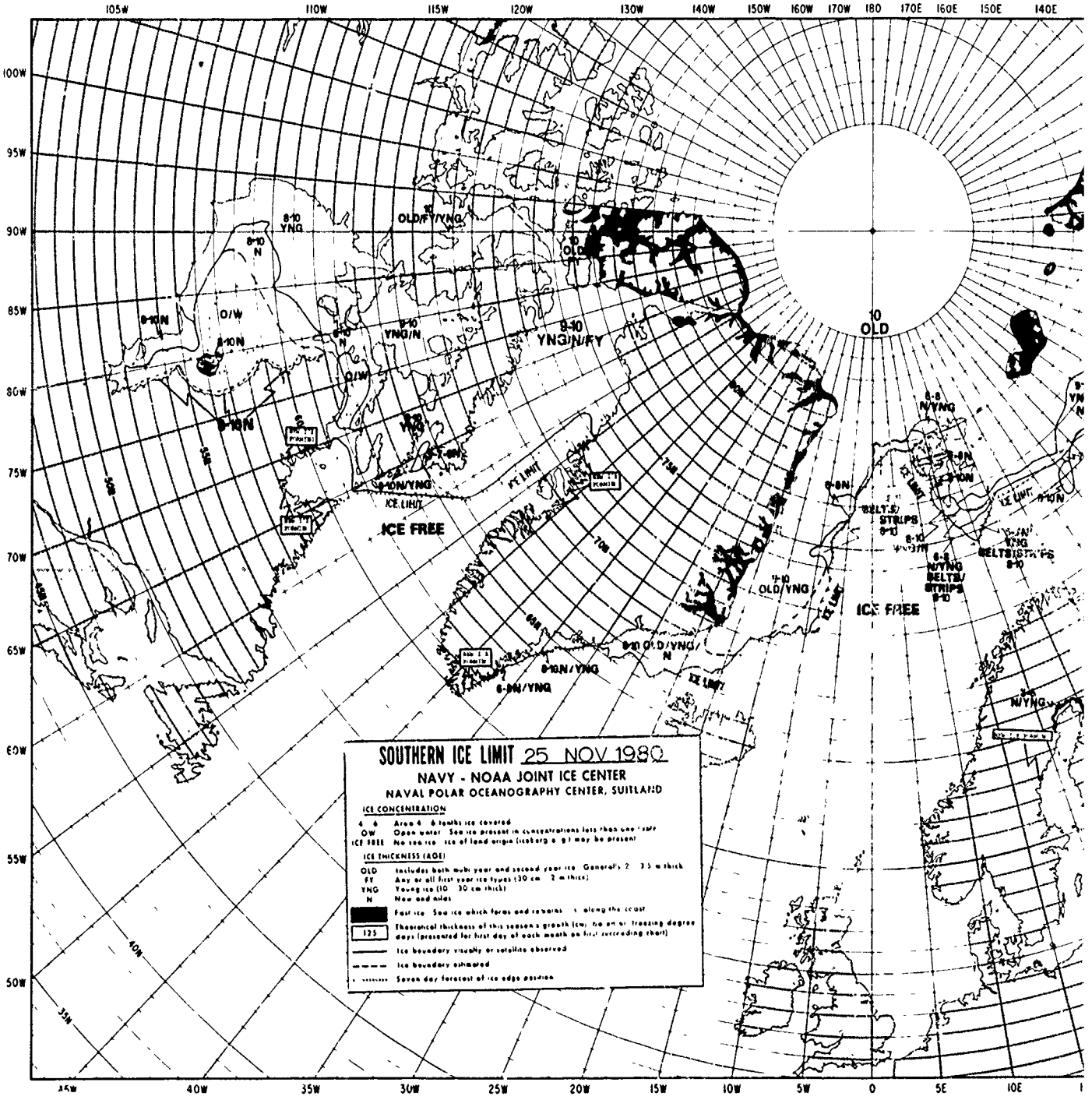
170W
180
170E
160E
150E
140E
130E
120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
0
5E
10E
15E
20E
25E
30E
35E
40E
OLD
ICE FREE
ICE FREE
OLD/YNG/N
YNG/N
N/YNG

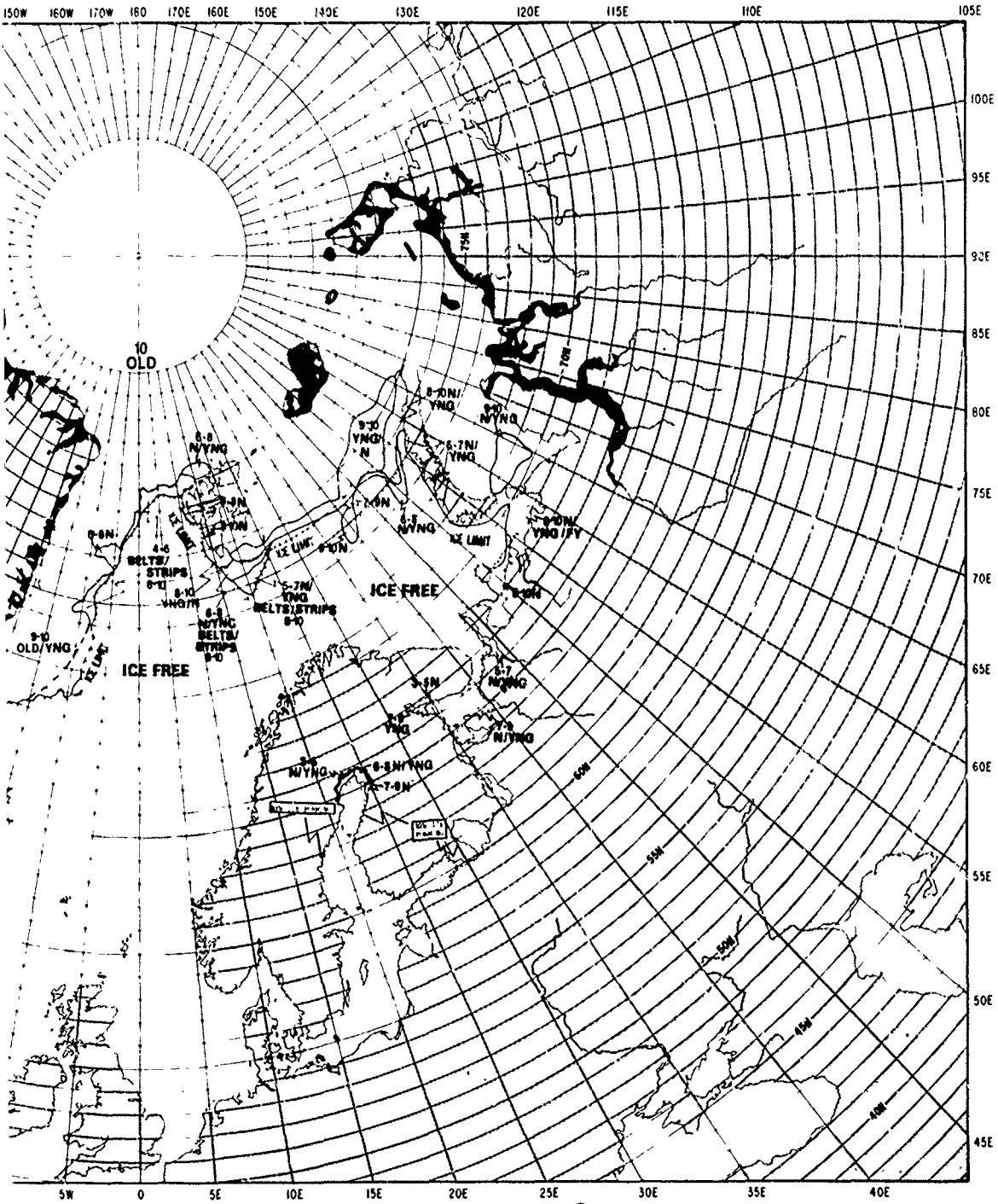

SOUTHERN ICE LIMIT 11 NOVEMBER 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
ICE FREE
ICE LIMIT
OLD
YNG/N
YNG/FY
N/YNG
OLD/YNG/FY
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E


150W
160W
170W
180
170E
160E
150E
140E
130E
120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
0W
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
10
6-8
YNG/N
9-10
YNG/N
8-10
YNG/N
9-10
YNG/FY
7-9
YNG/N
10
OLD
9-10
YNG/N
8-10
OLD/YNG
ICE FREE
ICE FREE
ICE LIMIT
ICE LIMIT
75N
70N
65N
60N
55N
50N
45N
40N


105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
ICE LIMIT
ICE FREE
SOUTHERN ICE LIMIT 18 NOV 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
OLD
FY
YNG
N
Seven day forecast of ice edge position


150W
160W
170W
180
170E
160E
150E
140E
130E
120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
10W
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
10
OLD
10
YNG/OLD/FY
9-10
N
6-8 YNG/N
BELTS/STRIPS 8-10
9-10
YNG/N
6-10
YNG/N
7-9
N/YNG
5-7 YNG/N
BELTS/STRIPS
6-10
YNG/N
9-10
YNG/FY
7-9
YNG
5-7N
6-10
OLD/YNG
ICE FREE
ICE FREE
ICE LIMIT
ICE LIMIT
ICE LIMIT
O/W
O/W
7-9
N/YNG
5-7
YNG/N
7-9
N
6-8
N
7-9
YNG/N
6-10
YNG/N
7-9
N/YNG
7-9
N/YNG
7-9
N/YNG
7-9
N
7-9
YNG/N
6-10
YNG/N
5-7
YNG/N
7-9
N
6-8
N
5-7
YNG/N
6-10
YNG/N
7-9
N/YNG


SOUTHERN ICE LIMIT 25 NOV 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
ICE FREE
ICE LIMIT
10 OLD
9-10 YNG/N/FY
9-10 YNG/N
8-10 YNG
8-10 N
O/W
8-10N
8-10N/YNG
6-8N/YNG
8-10 OLD/YNG/N
9-10 OLD/YNG
6-8 N/YNG
BELTS/STRIPS 8-10
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E


150W
160W
170W
180
170E
160E
150E
140E
130E
120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
10
OLD
ICE FREE
ICE FREE
9-10 OLD/YNG
4-6 BELTS/ STRIPS 9-10
6-8 N/YNG BELTS/ STRIPS 9-10
5-7N/ YNG BELTS/STRIPS 9-10
9-10 YNG/ N
8-10N/ YNG
9-10 N/YNG
5-7N/ YNG
4-6 N/YNG
9-10N/ YNG/FY
6-8 N/YNG
5-7 N/YNG
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7-9 N/YNG
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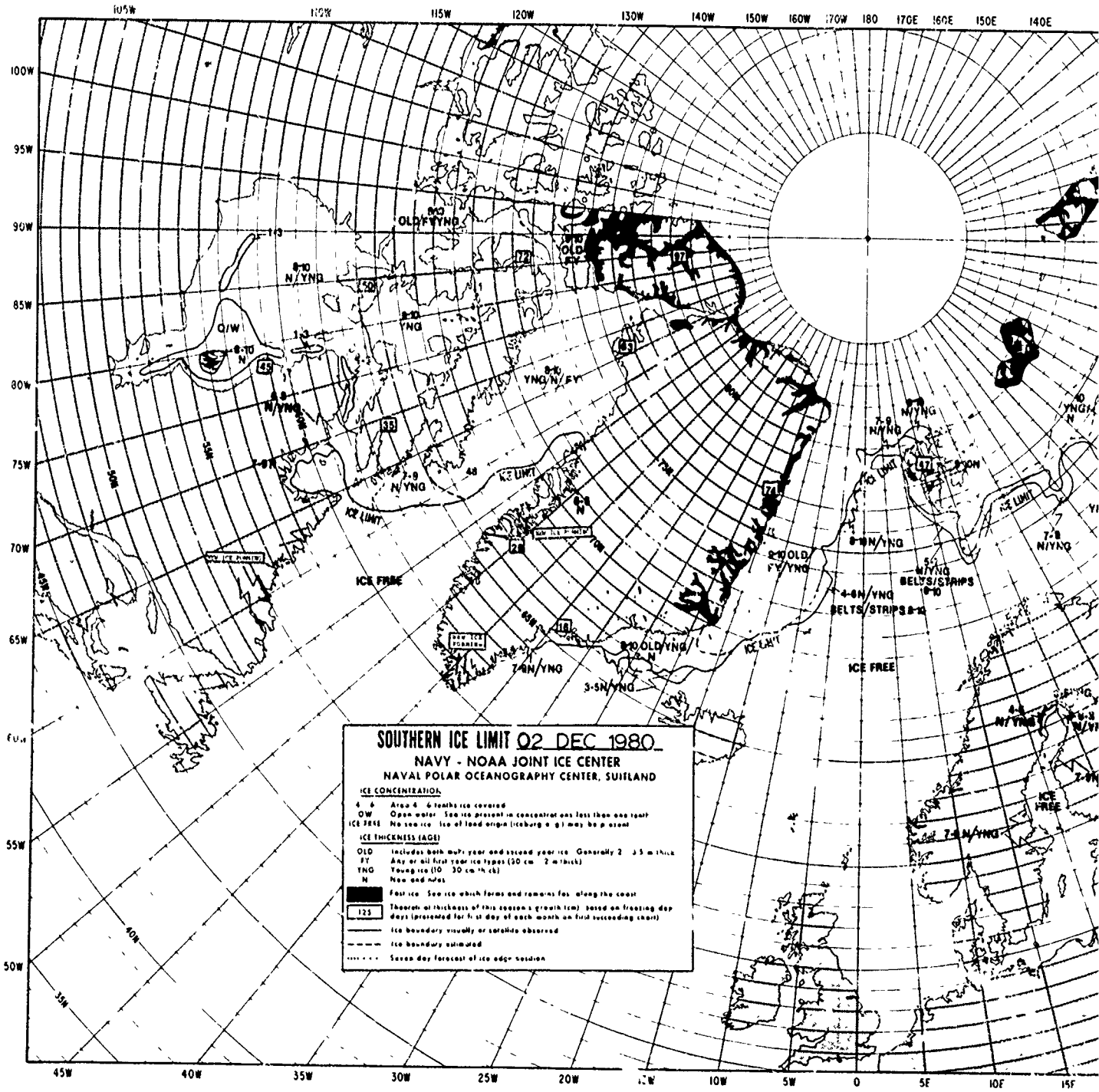
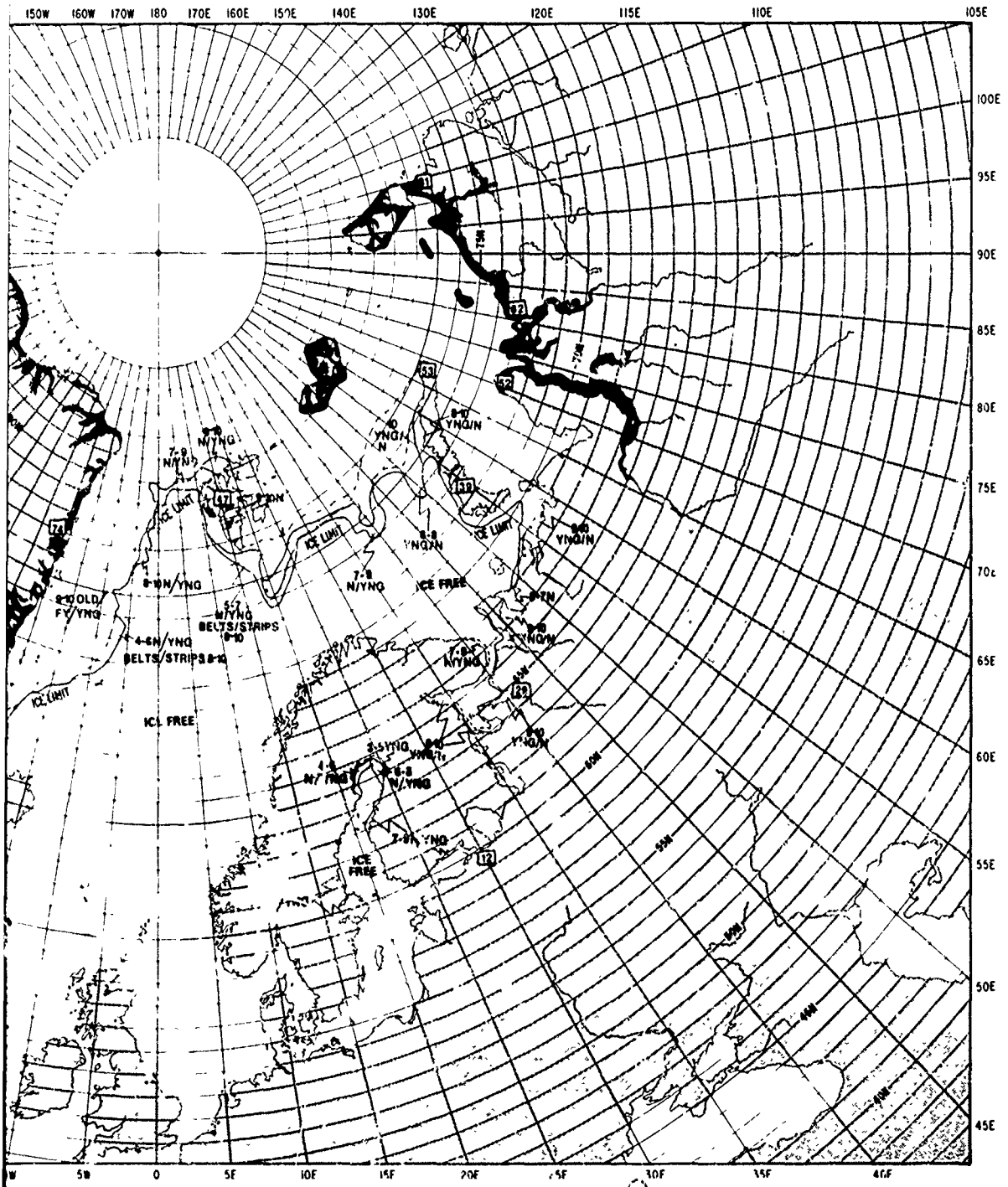
60N
55N
50N
45N
40N


105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
OLD/FY/YNG
8-10 N/YNG
O/W
8-10 N
YNG/N/FY
7-9 N/YNG
ICE LIMIT
ICE FREE
8-10 OLD/ FY/YNG
4-6N/YNG BELTS/STRIPS 8-10
8-10 OLD/YNG/ N
7-8N/YNG
3-5N/YNG
SOUTHERN ICE LIMIT 02 DEC 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be p esent
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm th ck)
N New and nilas
Fast ice See ice which forms and remains fas along the coast
Thickness of this season s growth (cm) based on freezing day days (presented for fi st day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position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160W
170W
180
170E
160E
150E
140E
130E
120E
115E
110E
105E
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95E
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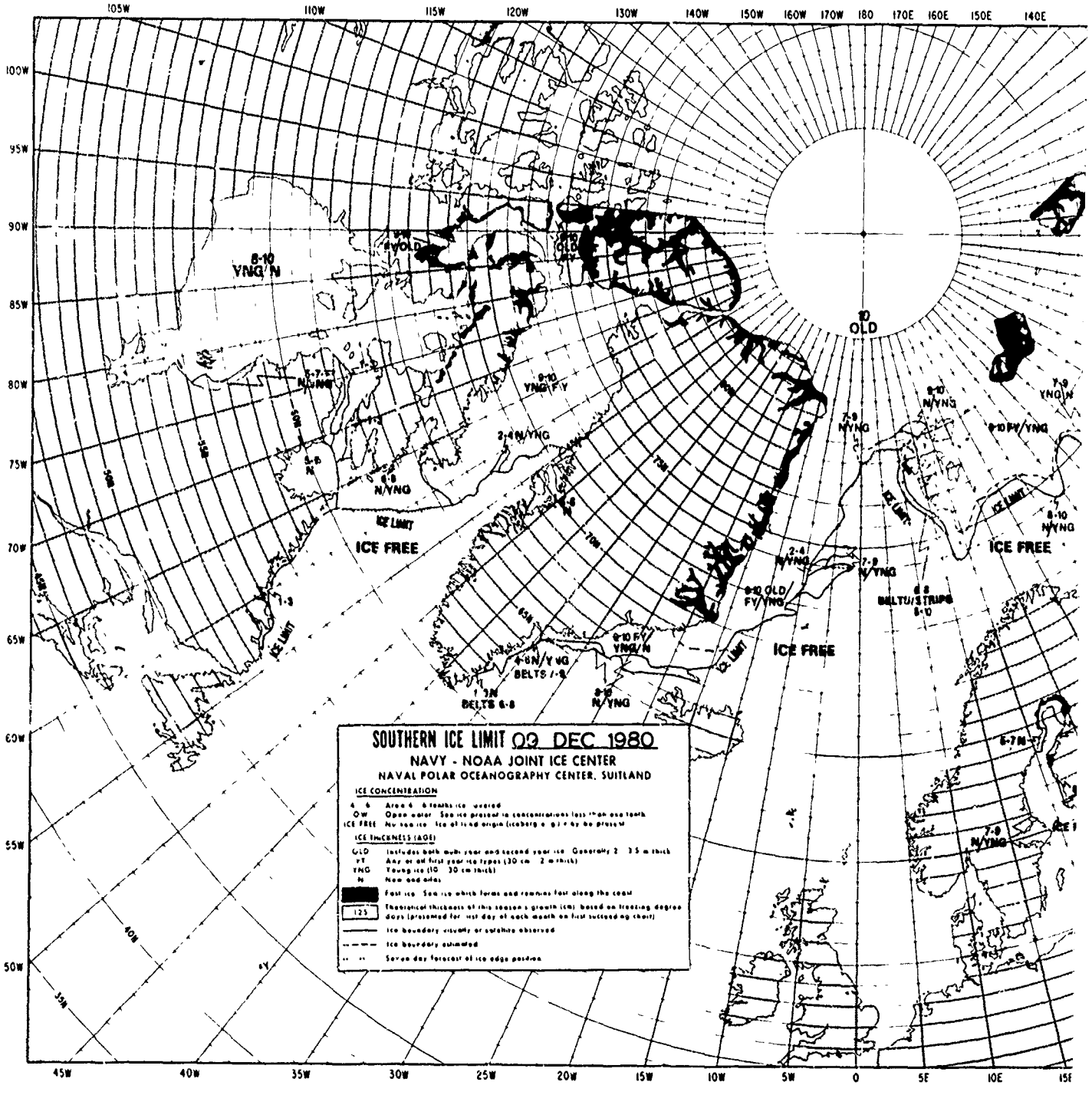
85E
80E
75E
70E
65E
60E
55E
50E
45E
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
ICE LIMIT
ICE FREE
8-10 N/YNG
7-9 N/YNG
9-10 OLD FY/YNG
4-6N/YNG BELTS/STRIPS 8-10
5-7 N/YNG BELTS/STRIPS 8-10
8-10 YNG/N
6-8 YNG/N
7-9 N/YNG
3-5YNG
6-8 N/YNG
7-9 N/YNG
ICE FREE

2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110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
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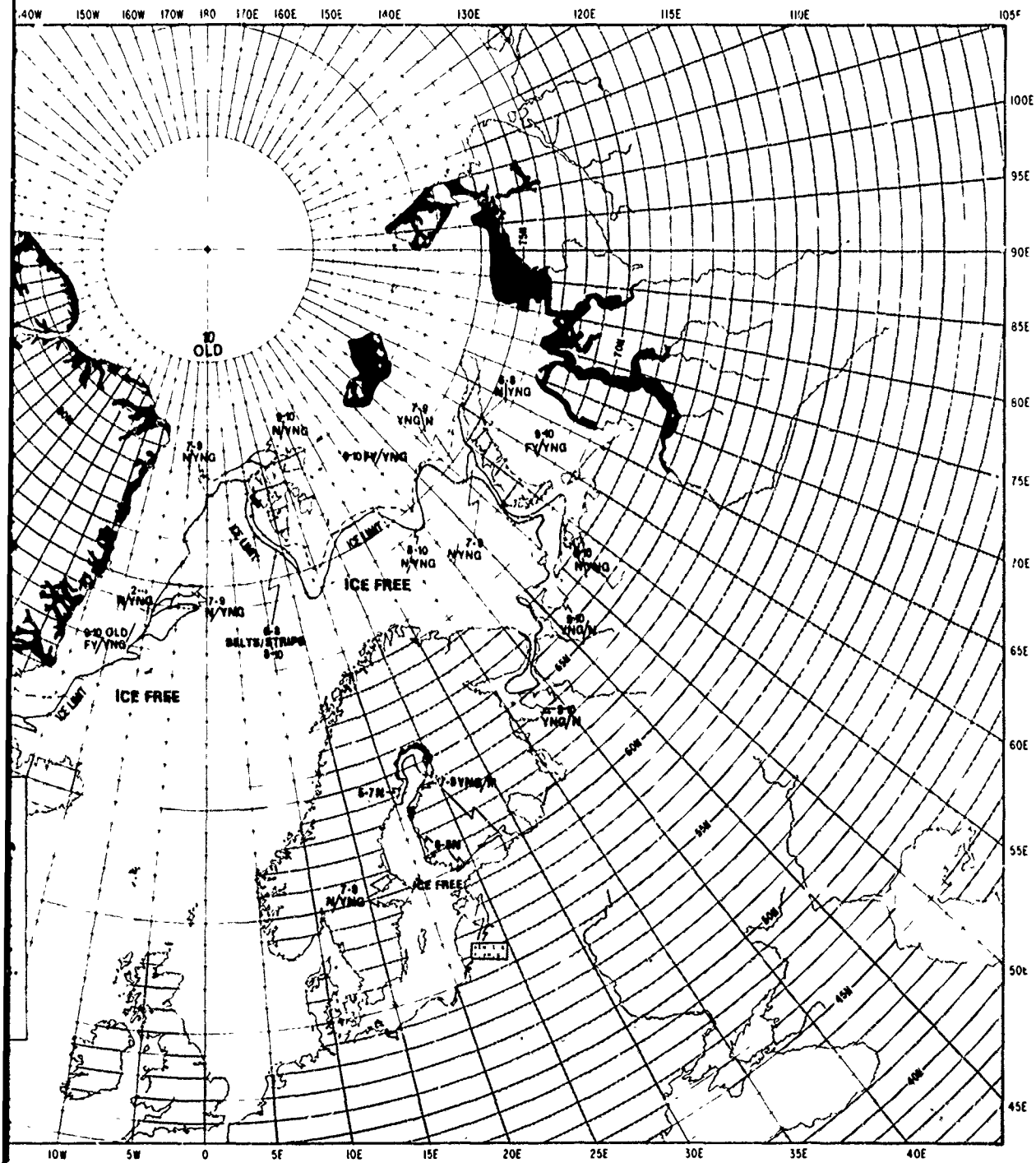
85W
80W
75W
70W
65W
60W
55W
50W
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E
8-10 YNG/N
10 OLD
ICE FREE
ICE LIMIT
SOUTHERN ICE LIMIT 09 DEC 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
OW Open water
ICE FREE No sea ice
ICE THICKNESS (AGE)
OLD
YNG
N
Fast ice
Ice boundary visually or satellite observed
Ice boundary estimated



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150W
160W
170W
180
170E
160E
150E
140E
130E
120E
115E
110E
105E
100E
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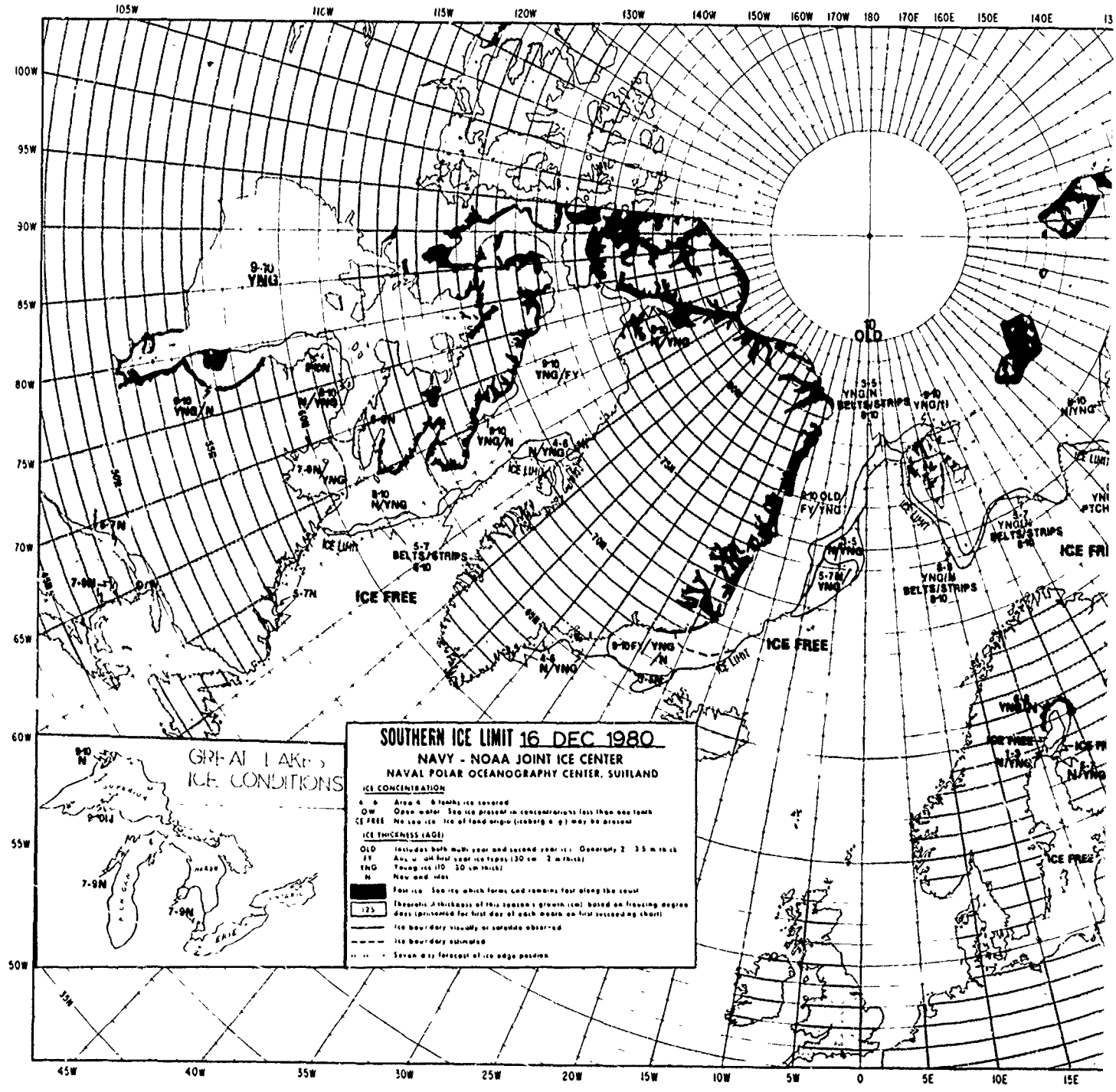
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
10W
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
10 OLD
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
ICE LIMIT
ICE LIMIT
7-9 N/YNG
9-10 N/YNG
9-10 FY/YNG
7-9 YNG/N
8-8 N/YNG
9-10 FY/YNG
8-10 N/YNG
7-9 N/YNG
9-10 N/YNG
9-10 YNG/N
9-10 YNG/N
7-9 N/YNG
9-10 OLD FY/YNG
6-8 BELTS/STRIPS 8-10
5-7N
7-9 YNG/N
6-8N
7-9 N/YNG

2


SOUTHERN ICE LIMIT 16 DEC 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
ICE THICKNESS (AGE)
GREAT LAKES ICE CONDITIONS
ICE FREE
ICE LIMIT
9-10 YNG
9-10 YNG/FY
9-10 YNG/N
9-10 N/YNG
5-7 BELTS/STRIPS 8-10
9-10 OLD
9-10 OLD FY/YNG
5-7N
7-9N
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
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35W
30W
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10W
5W
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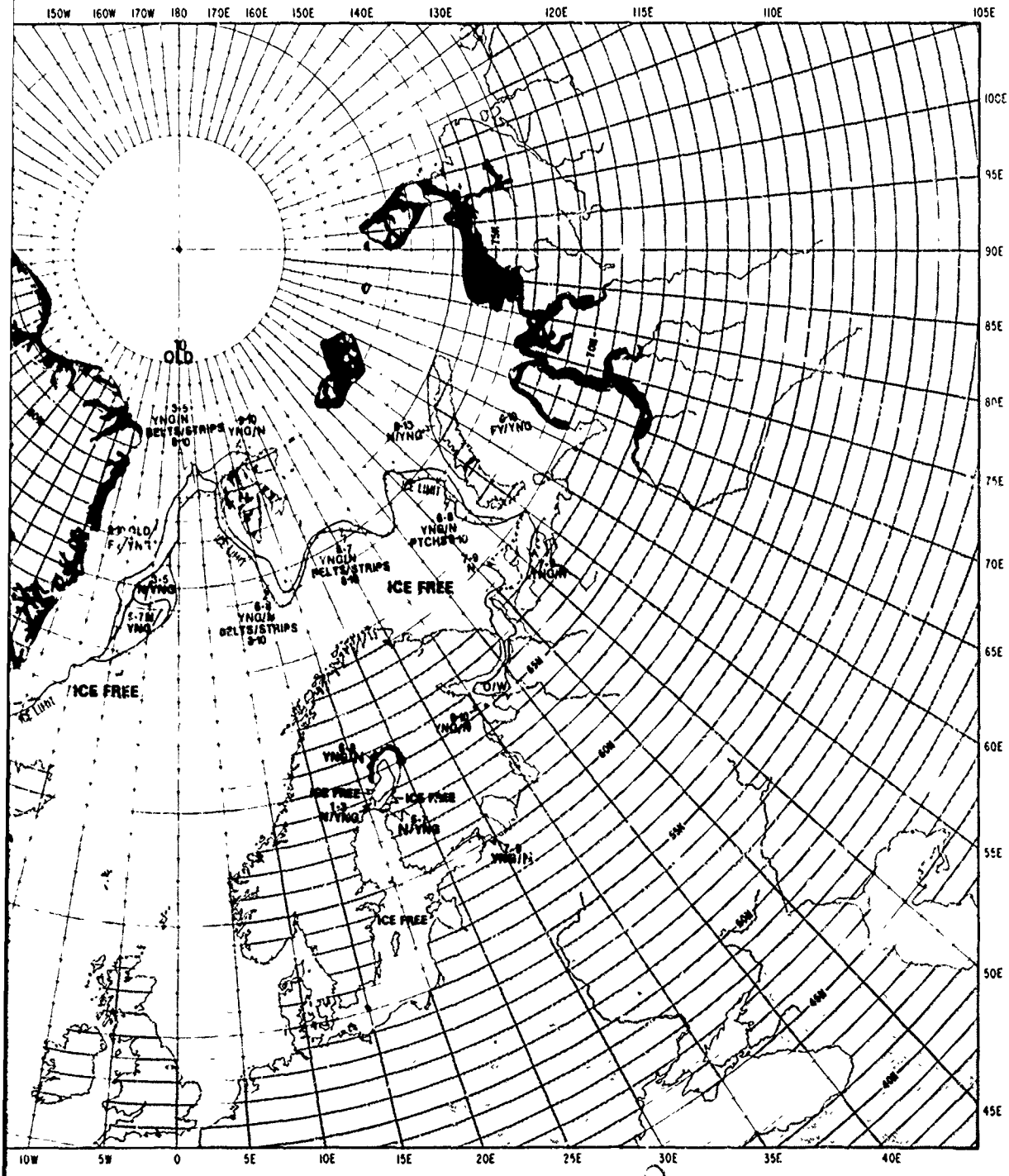
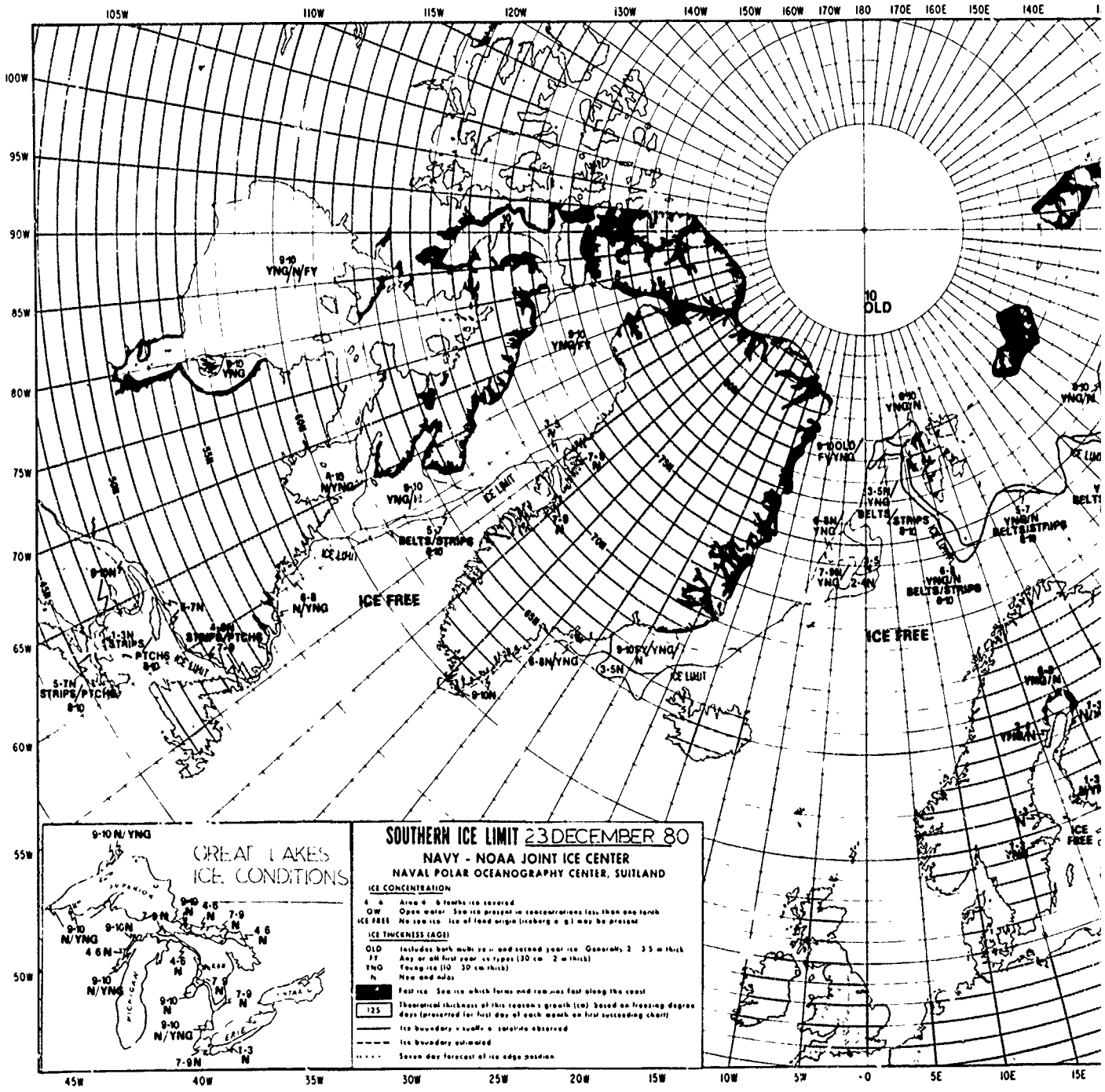
5E
10E
15E


150W
160W
170W
180
170E
160E
150E
140E
130E
120E
115E
110E
105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
10W
5W
0
5E
10E
15E
20E
25E
30E
35E
40E
OLD
ICE FREE
ICE FREE
ICE FREE
ICE FREE
ICE FREE
YNG/N
BELTS/STRIPS
YNG/N
FY/YNG
N/YNG
YNG/N
PTCHS
YNG/N
BELTS/STRIPS
YNG/N
BELTS/STRIPS
N/YNG
YNG/N
YNG/N
N/YNG
YNG/N
O/W
YNG/N
YNG/N
N/YNG
N/YNG
YNG/N

2


SOUTHERN ICE LIMIT 23 DECEMBER 80
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
4 - 6 Area 4 - 6 tenths ice covered
OW Open water. Sea ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (iceberg e.g.) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice. Generally 2 - 3.5 m thick
FY Any or all first year ice types (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
GREAT LAKES ICE CONDITIONS
ICE FREE
ICE LIMIT
OLD
9-10 YNG/N/FY
9-10 YNG/FY
9-10 YNG
9-10 N/YNG
9-10 YNG/N
9-10 OLD/FY/YNG
3-5N/YNG BELTS/STRIPS 8-10
5-7 YNG/N BELTS/STRIPS 8-10
6-8 YNG/N BELTS/STRIPS 8-10
5-7 BELTS/STRIPS 8-10
6-8 N/YNG
9-10 FY/YNG/N
6-8N/YNG
3-5N
9-10N
1-3N STRIPS/PTCHS 8-10
5-7N STRIPS/PTCHS 8-10
9-10 N/YNG
9-10N
4-6 N
7-9 N
1-3 N
105W
110W
115W
120W
130W
140W
150W
160W
170W
180
170E
160E
150E
140E
100W
95W
90W
85W
80W
75W
70W
65W
60W
55W
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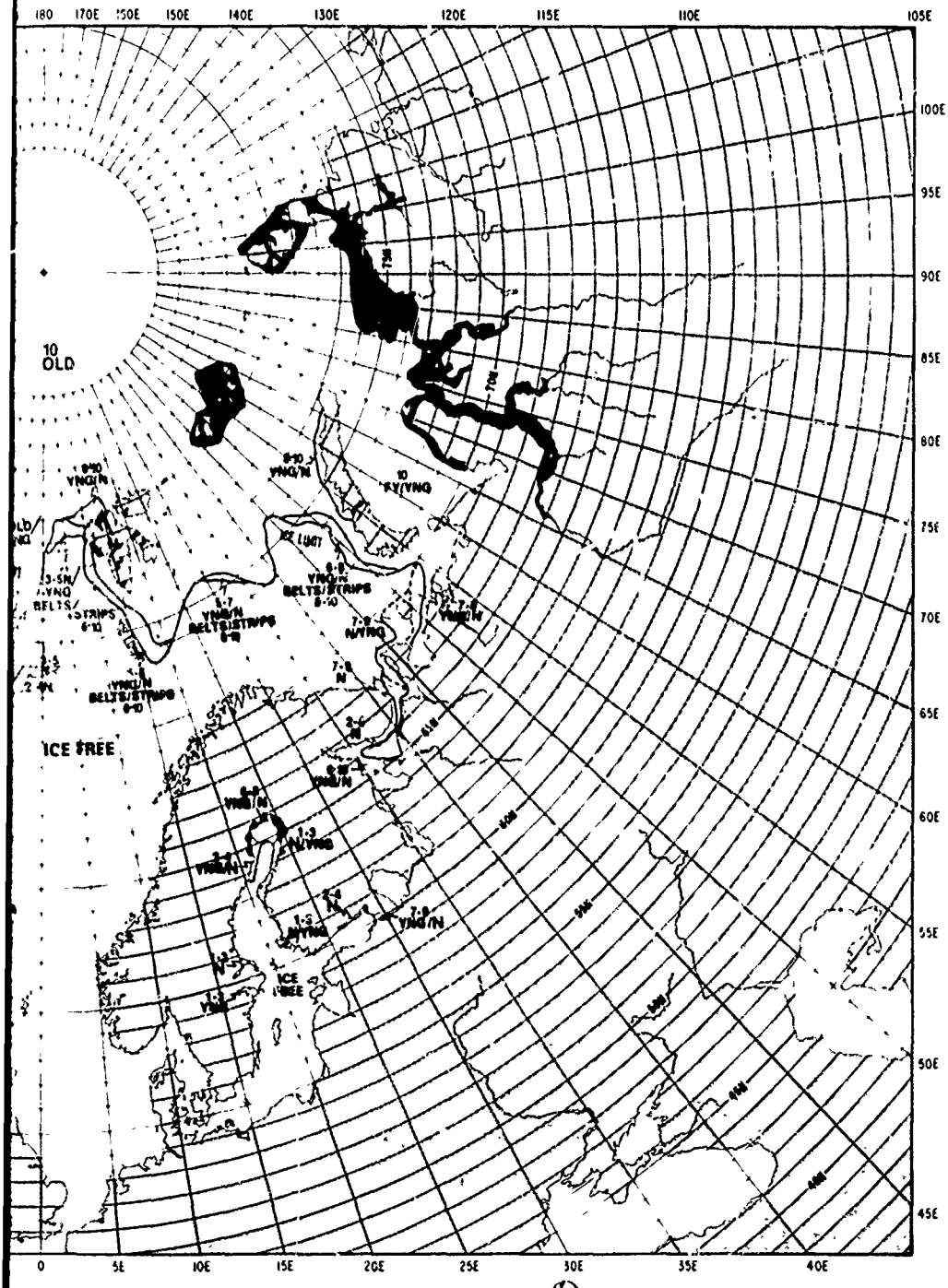
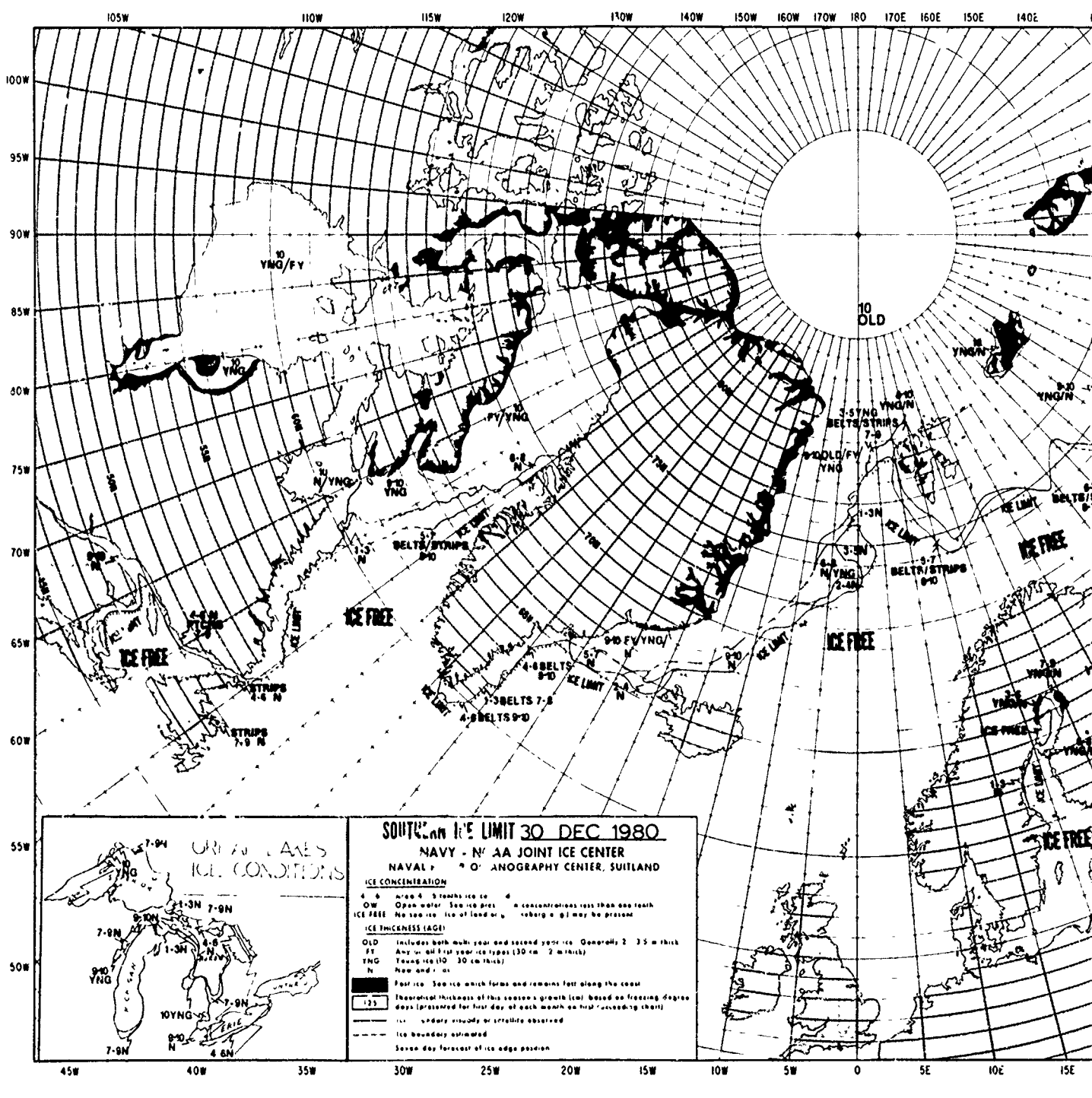
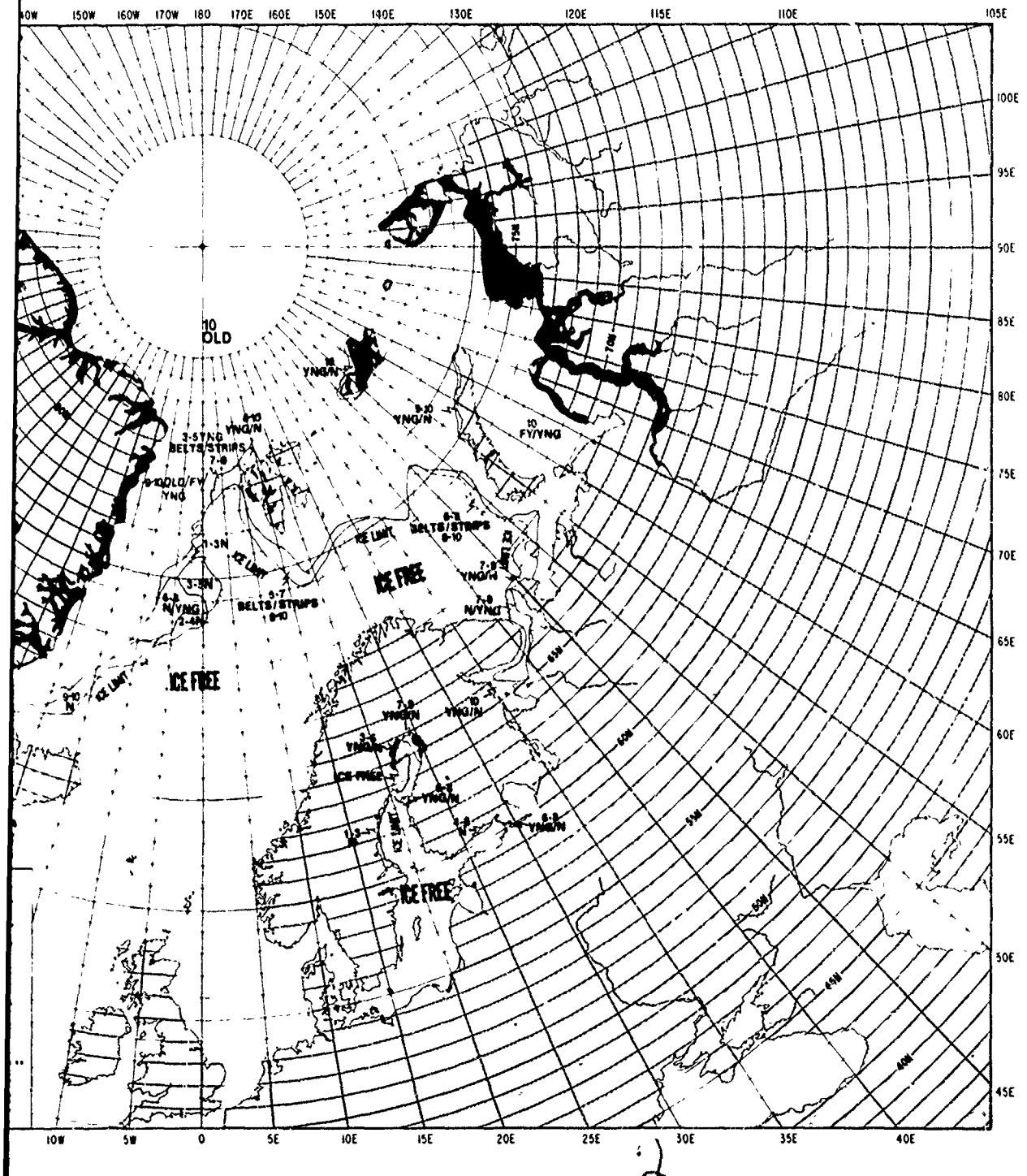
45W
40W
35W
30W
25W
20W
15W
10W
5W
0
5E
10E
15E

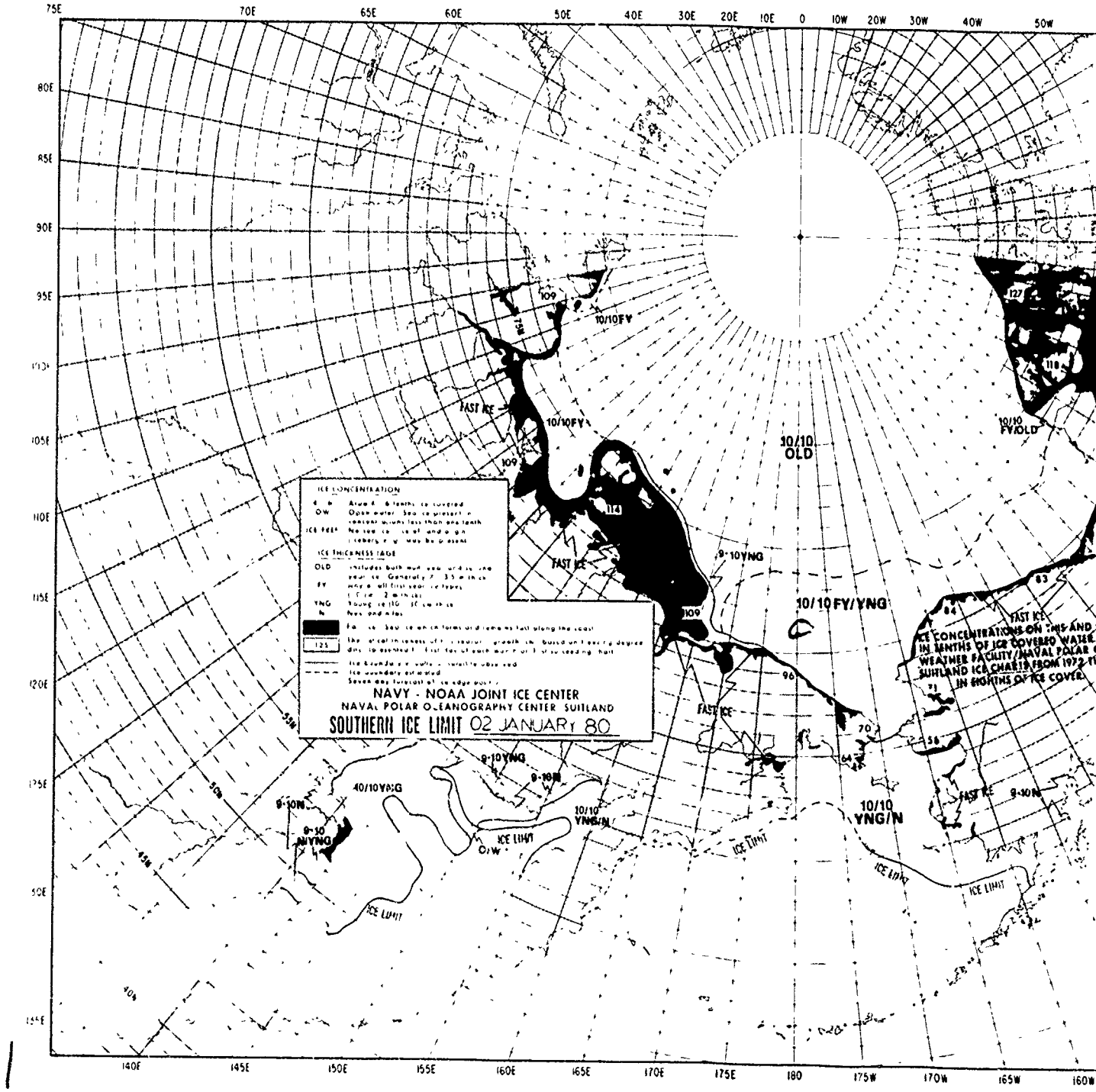

180 170E 160E 150E 140E 130E 120E 115E 110E 105E
100E
95E
90E
85E
80E
75E
70E
65E
60E
55E
50E
45E
0 5E 10E 15E 20E 25E 30E 35E 40E
10
OLD
ICE FREE
ICE LIMIT
ICE FREE

2

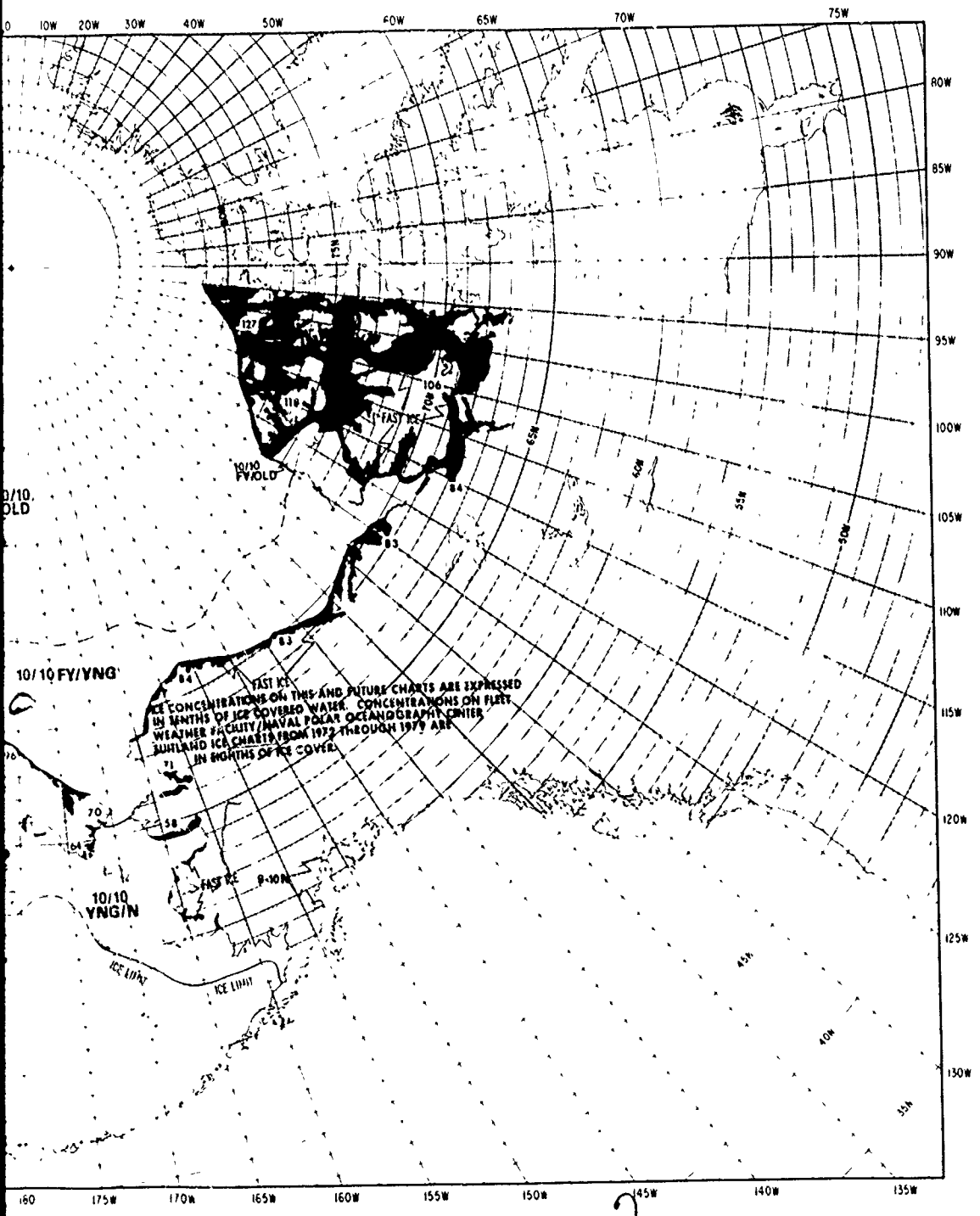


SOUTHERN ICE LIMIT 30 DEC 1980
NAVY - NOAA JOINT ICE CENTER
NAVAL ... OCEANOGRAPHY CENTER, SUITLAND
ICE CONCENTRATION
OW Open water
ICE FREE No sea ice
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice. Generally 2 - 3.5 m thick
FY Any or all first year ice types (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and ...
Fast ice. Sea ice which forms and remains fast along the coast
Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
ICE FREE
ICE LIMIT
10 OLD
10 YNG/FY
10 YNG
10 FY/YNG
10 N/YNG
9-10 YNG
9-10 FY/YNG
9-10 N
9-10 OLD/FY YNG
3-5 YNG BELTS/STRIPS 7-9
5-7 BELTS/STRIPS 9-10
4-6 BELTS 9-10
1-3 BELTS 7-8
4-6 BELTS 9-10
STRIPS 4-6 N
STRIPS 7-9 N
ICE CONDITIONS

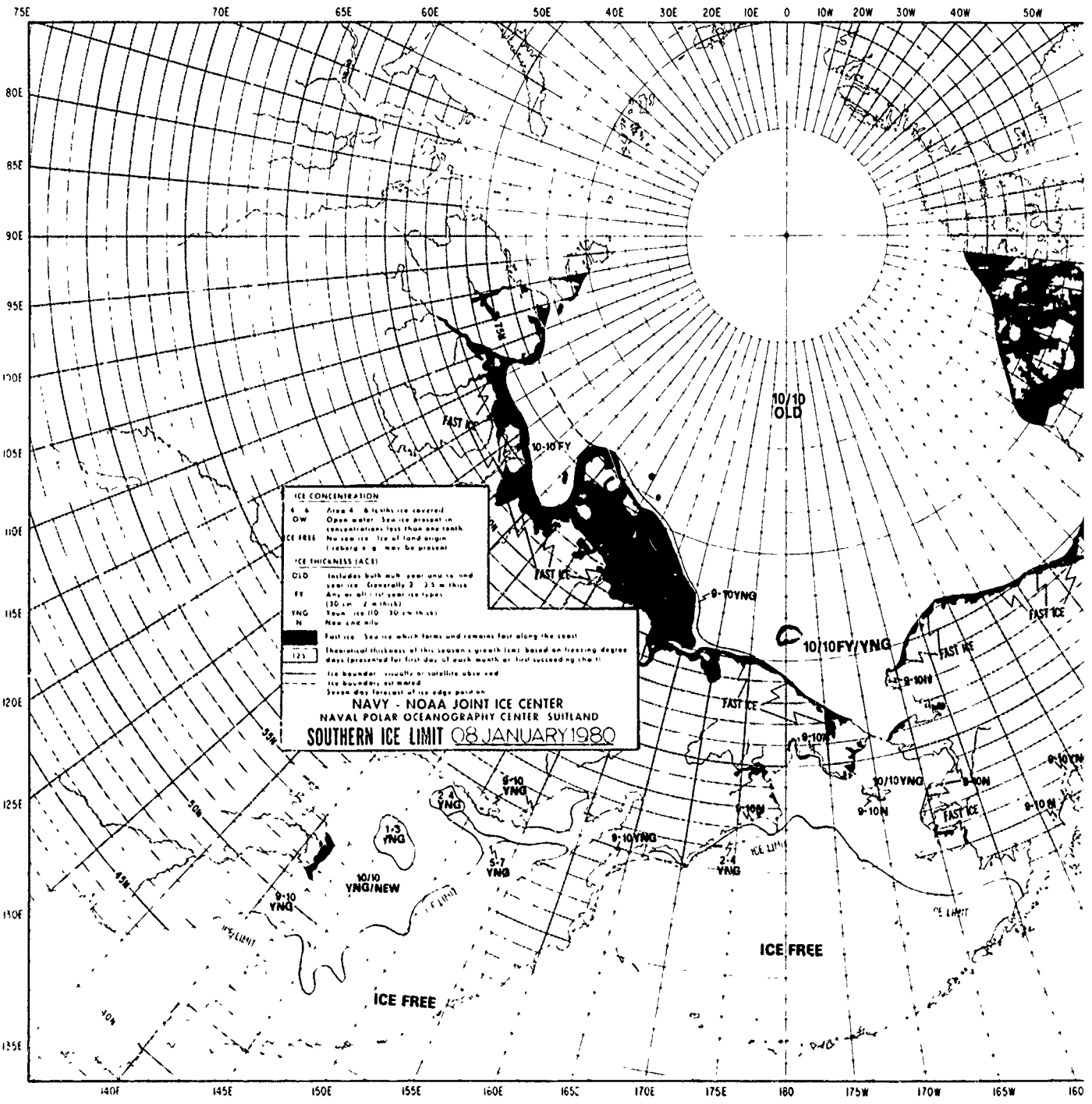

ICE FREE
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
3-5YNG BELTS/STRIPS
7-9 OLD/FY YNG
1-3N
3-5N
6-9 N/YNG 2-4N
9-7 BELTS/STRIPS 9-10
9-10 YNG/N
FY/YNG
7-9 N/YNG
10 YNG/N
7-9 YNG/N
6-9 YNG/N
6-8 YNG/N
7-9 YNG/N
6-8 YNG/N
6-8 YNG/N
6-8



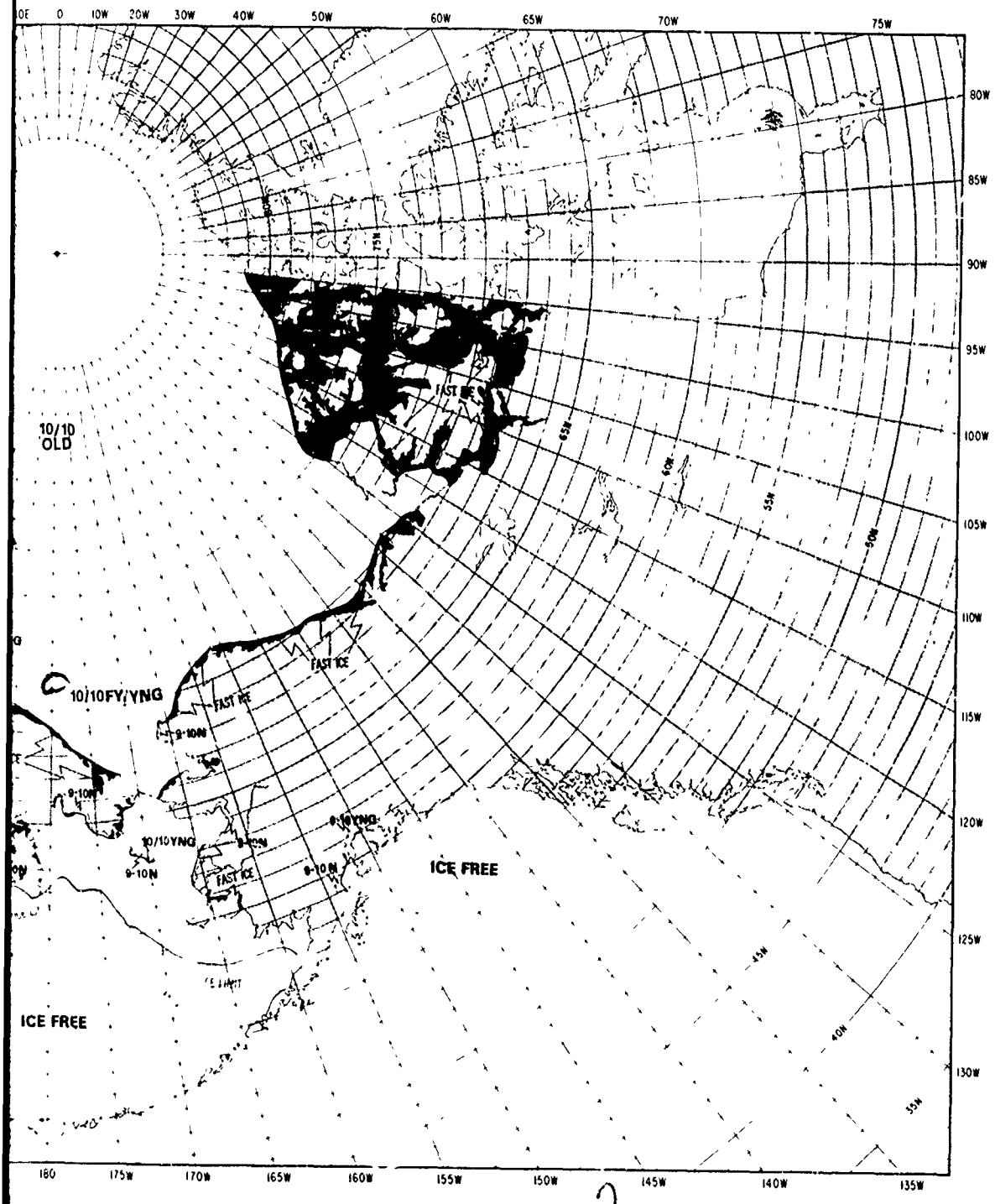
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 02 JANUARY 80
ICE CONCENTRATION
ICE THICKNESS/AGE
FAST ICE
ICE LIMIT
10/10 OLD
10/10 FY/YNG
10/10 YNG/N
10/10 FY/OLD
10/10 FY
9-10 YNG
9-10 N
40/10 YNG
ICE CONCENTRATIONS ON THIS AND IN TENTHS OF ICE COVERED WATER WEATHER FACILITY/NAVAL POLAR SUITLAND ICE CHARTS FROM 1972 IN EIGHTHS OF ICE COVER

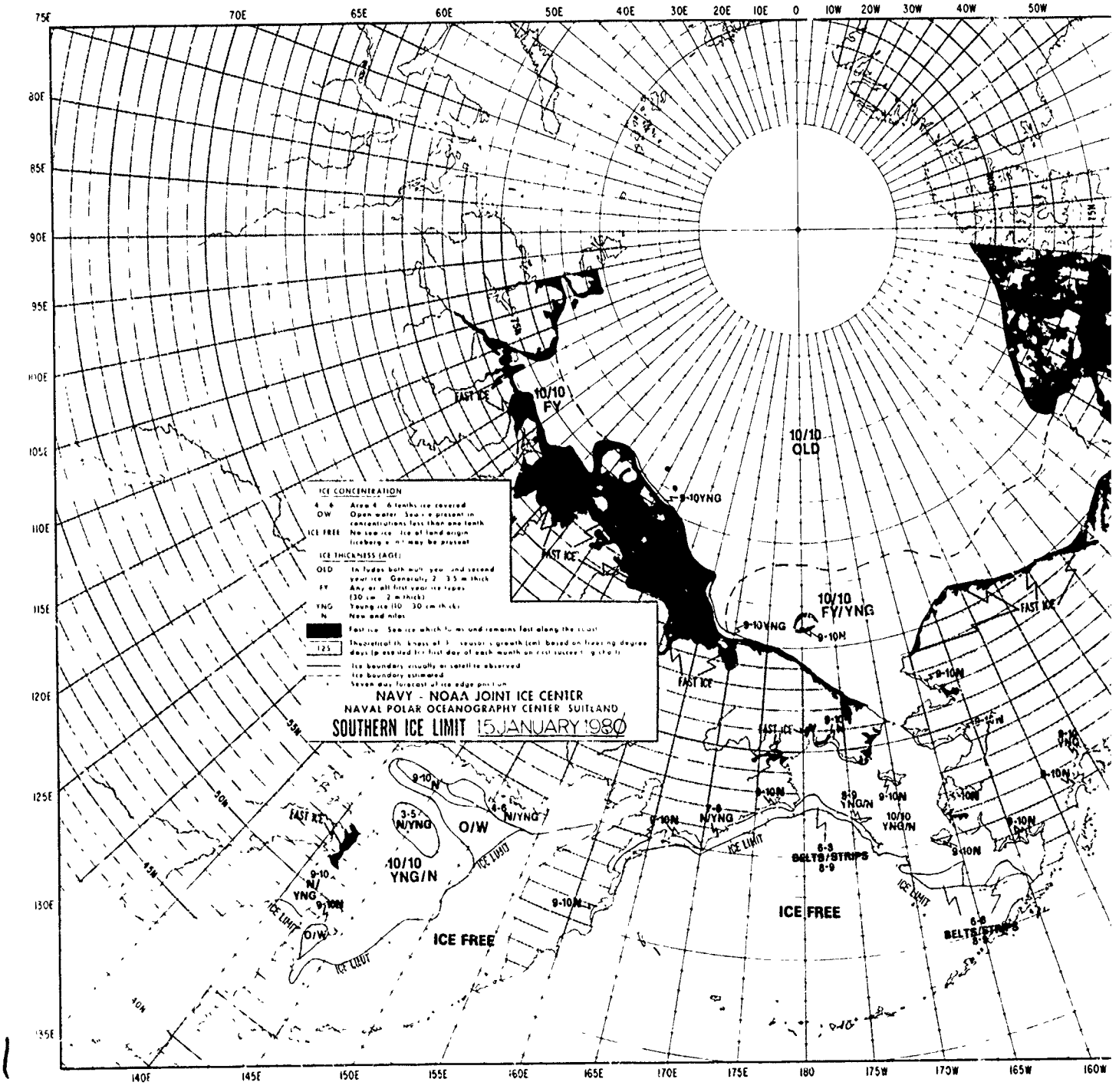

10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
160
FAST ICE
10/10 FY/OLD
10/10 FY/YNG
10/10 YNG/N
FAST ICE 8-10/10
ICE LIMIT
ICE CONCENTRATIONS ON THIS AND FUTURE CHARTS ARE EXPRESSED IN TENTHS OF ICE COVERED WATER. CONCENTRATIONS ON FLEET WEATHER FACILITY/NAVAL POLAR OCEANOGRAPHY CENTER SUNLAND ICE CHARTS FROM 1972 THROUGH 1979 ARE IN EIGHTHS OF ICE COVER.

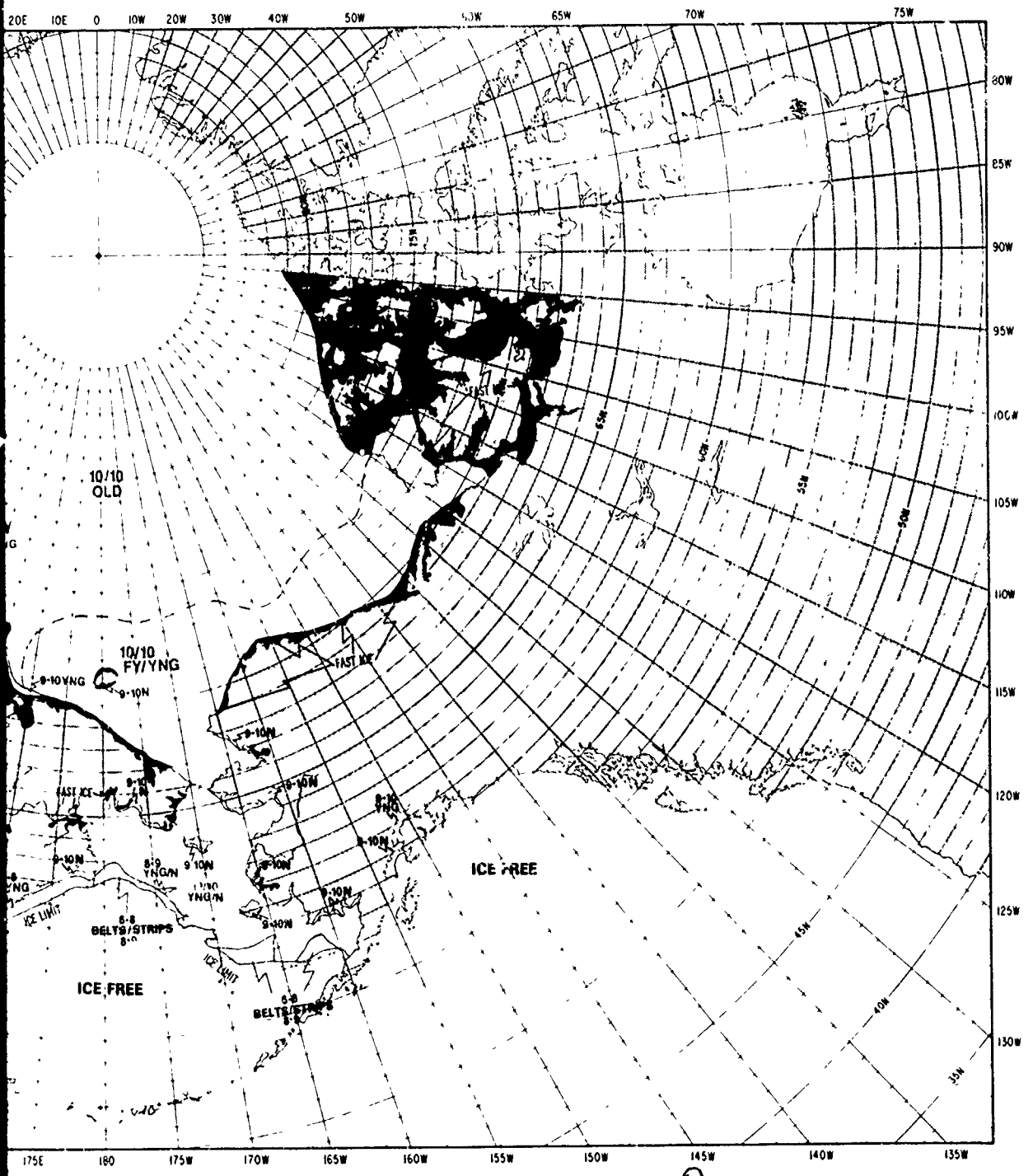
2

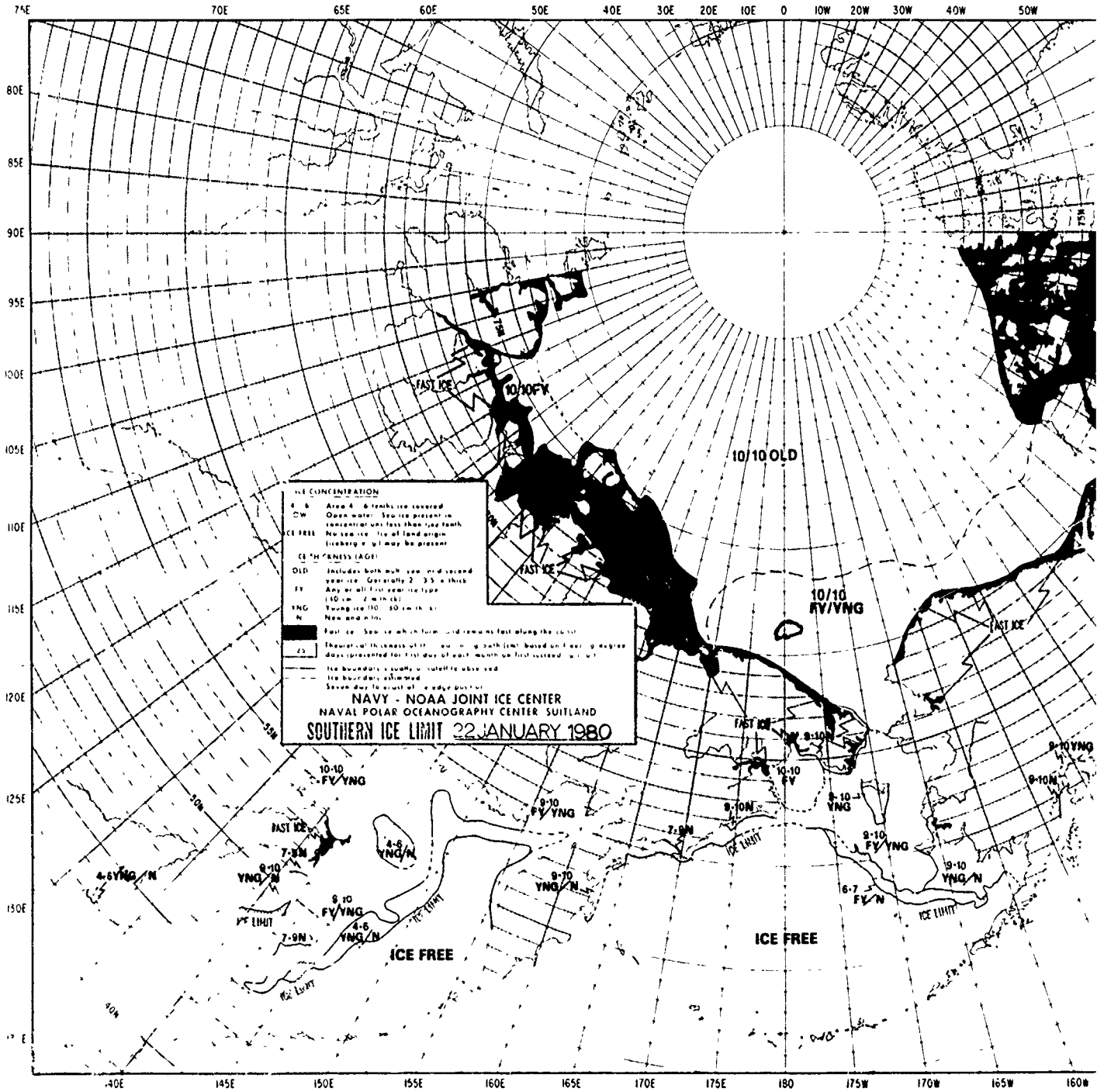


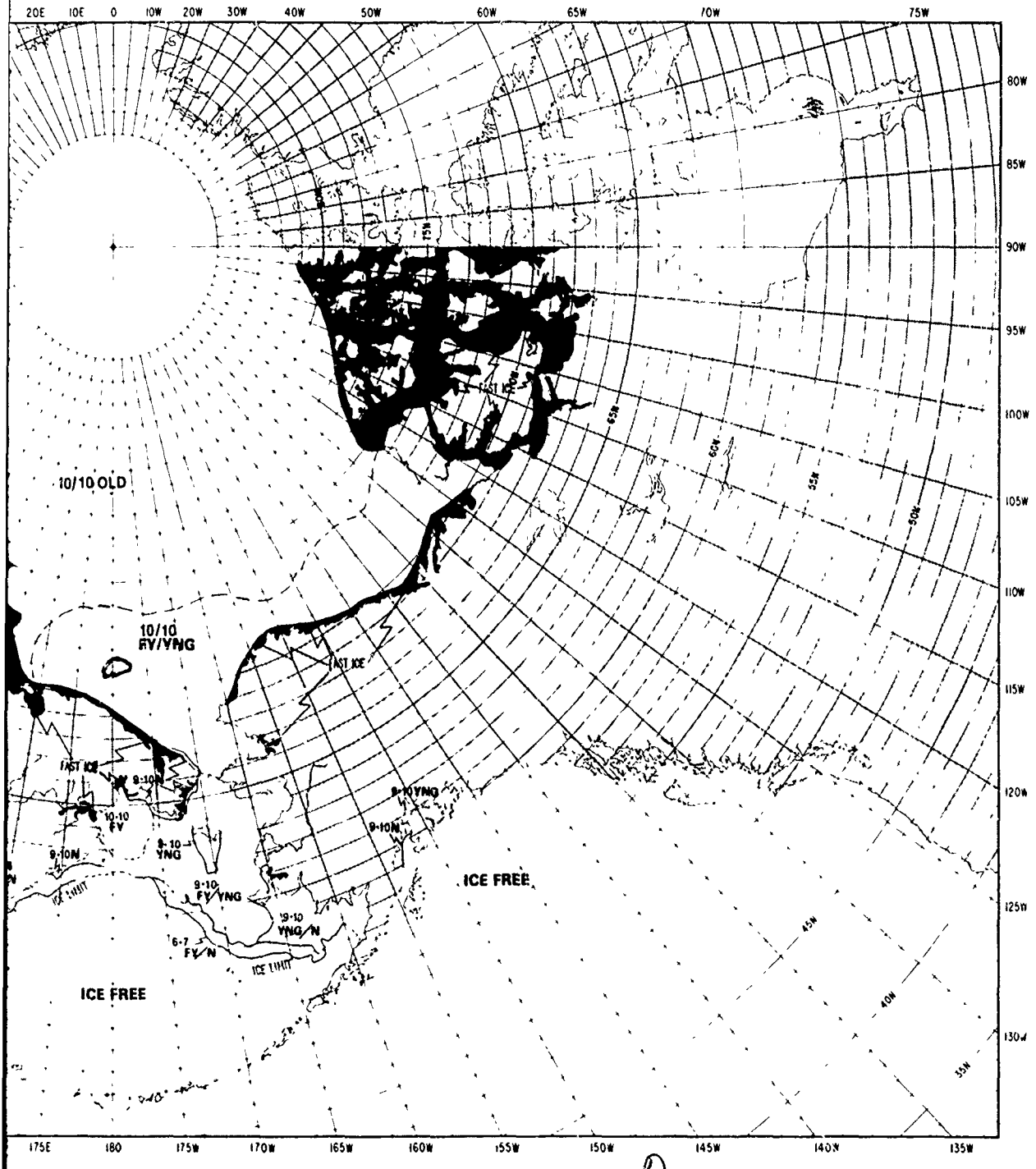
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g may be present)
ICE THICKNESS (ACE)
OLD Includes both multi year and second year ice Generally 2 3.5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilo
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month or first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 08 JANUARY 1980
10/10 OLD
10-10 FY
FAST ICE
9-10 YNG
10/10 FY/YNG
10/10 YNG
9-10 N
10/10 YNG/NEW
1-3 YNG
2-4 YNG
5-7 YNG
ICE FREE
ICE LIMIT


0E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10/10
OLD
10/10FY/YNG
FAST ICE
9-10N
10/10YNG
ICE FREE
ICE FREE


ICE CONCENTRATION
OW Open water
ICE FREE
ICE THICKNESS (AGE)
OLD
FY
YNG
NEW
Fast ice
ICE BOUNDARY
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 15 JANUARY 1980
FAST ICE
10/10 FY
10/10 OLD
9-10YNG
10/10 FY/YNG
9-10N
3-5 N/YNG
O/W
4-6 N/YNG
10/10 YNG/N
ICE LIMIT
9-10 N/YNG
ICE FREE
7-8 N/YNG
8-9 YNG/N
10/10 YNG/N
6-8 BELTS/STRIPS 8-9
6-8 BELTS/STRIPS 8-9


20E
10E
0
10W
20W
30W
40W
50W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
55N
50N
45N
40N
35N
10/10
OLD
10/10
FY/YNG
9-10YNG
9-10N
FAST ICE
8-9
YNG/N
ICE LIMIT
6-8
BELTS/STRIPS
ICE FREE
175E
180
175W
170W
165W
160W
155W
150W
145W
140W
135W


NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 22 JANUARY 1980
ICE CONCENTRATION
OLD
FY
YNG
N
FAST ICE
10/10FV
10/10 OLD
10/10 FV/YNG
ICE FREE
ICE LIMIT


20E
10E
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10W
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30W
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60W
65W
70W
75W
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90W
95W
100W
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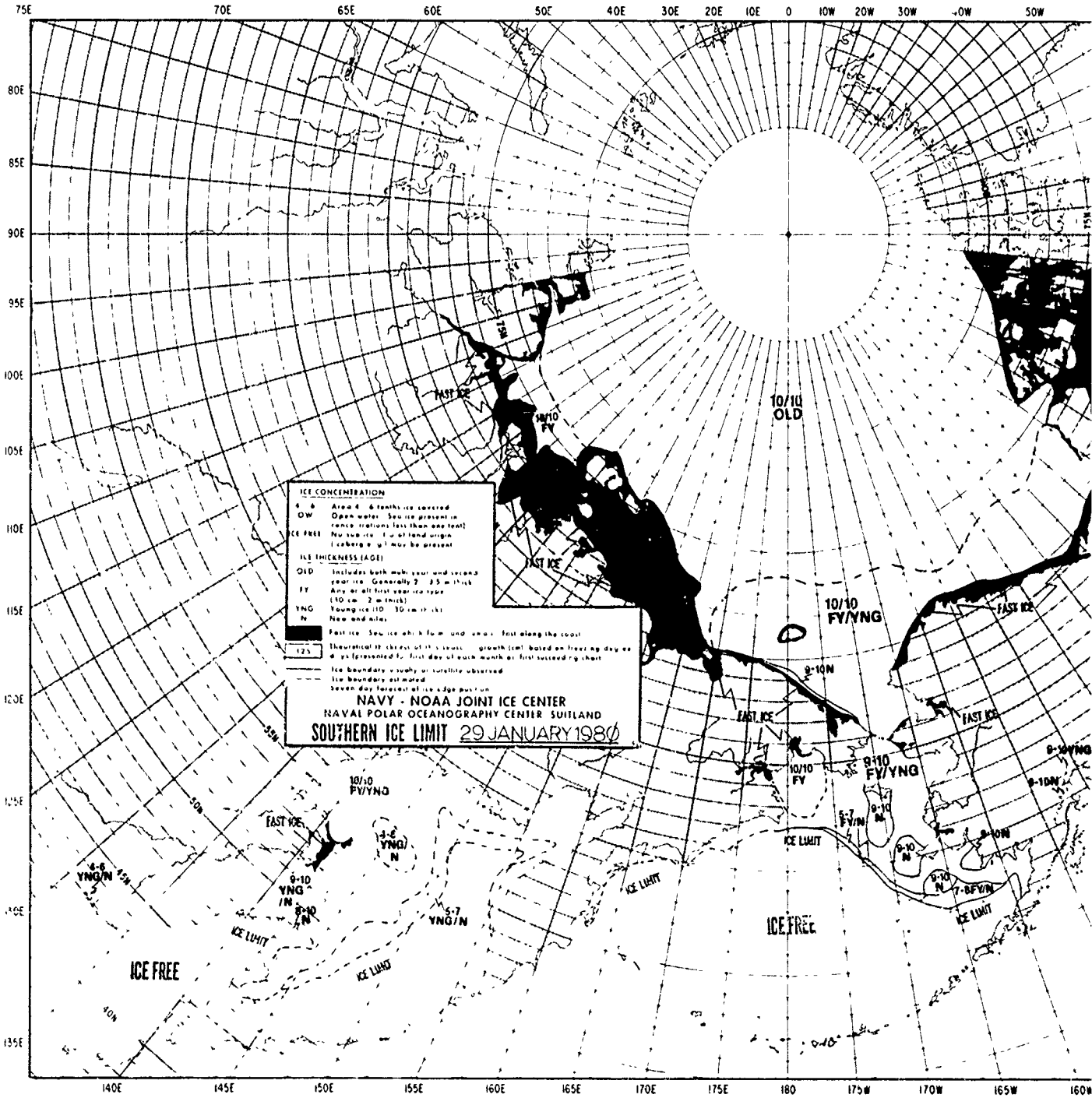
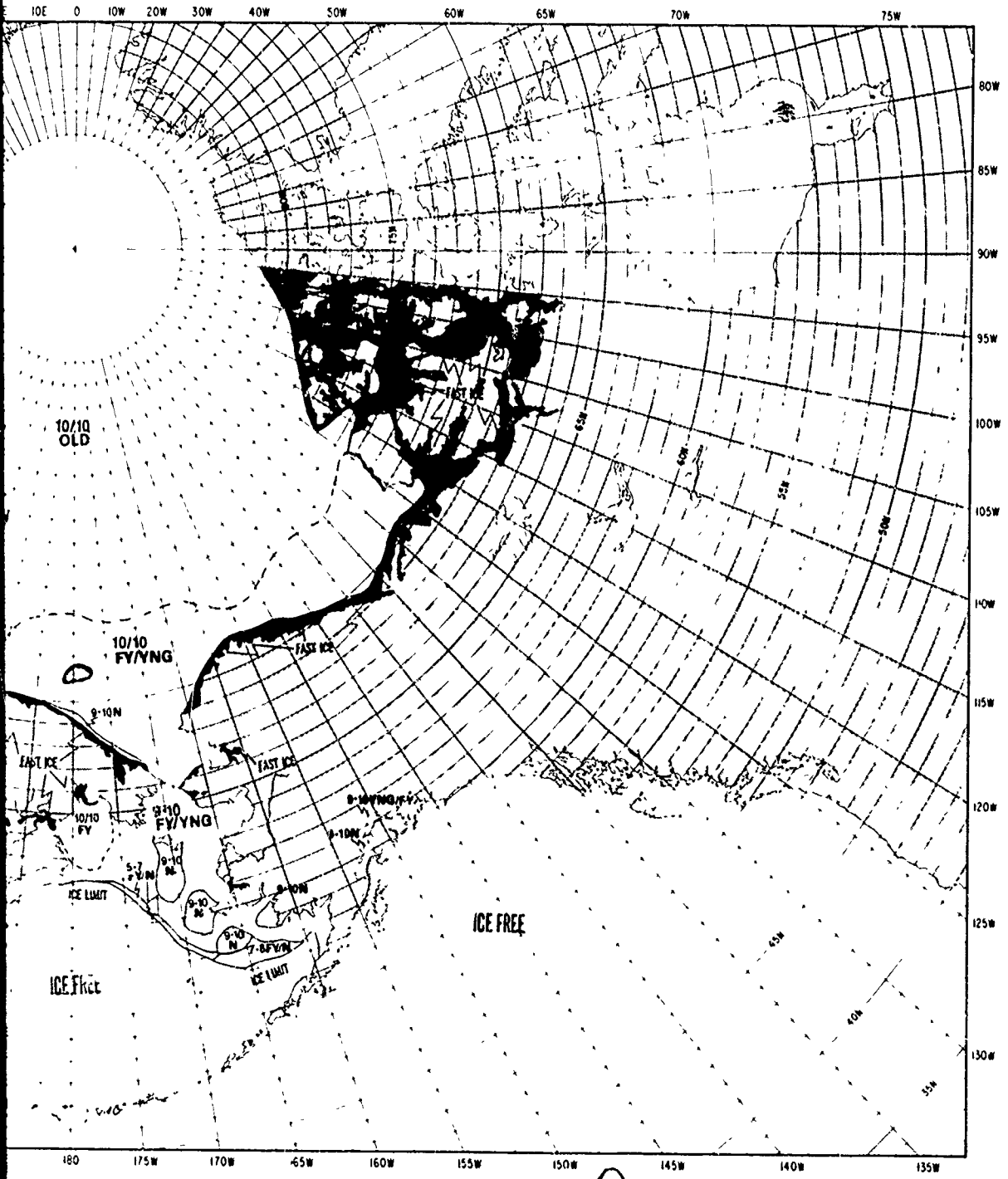
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
180
175E
10/10 OLD
10/10 FY/YNG
FAST ICE
9-10N
10-10 FY
9-10 YNG
9-10 FY/YNG
9-10 YNG/N
6-7 FY/N
ICE LIMIT
ICE FREE
ICE FREE

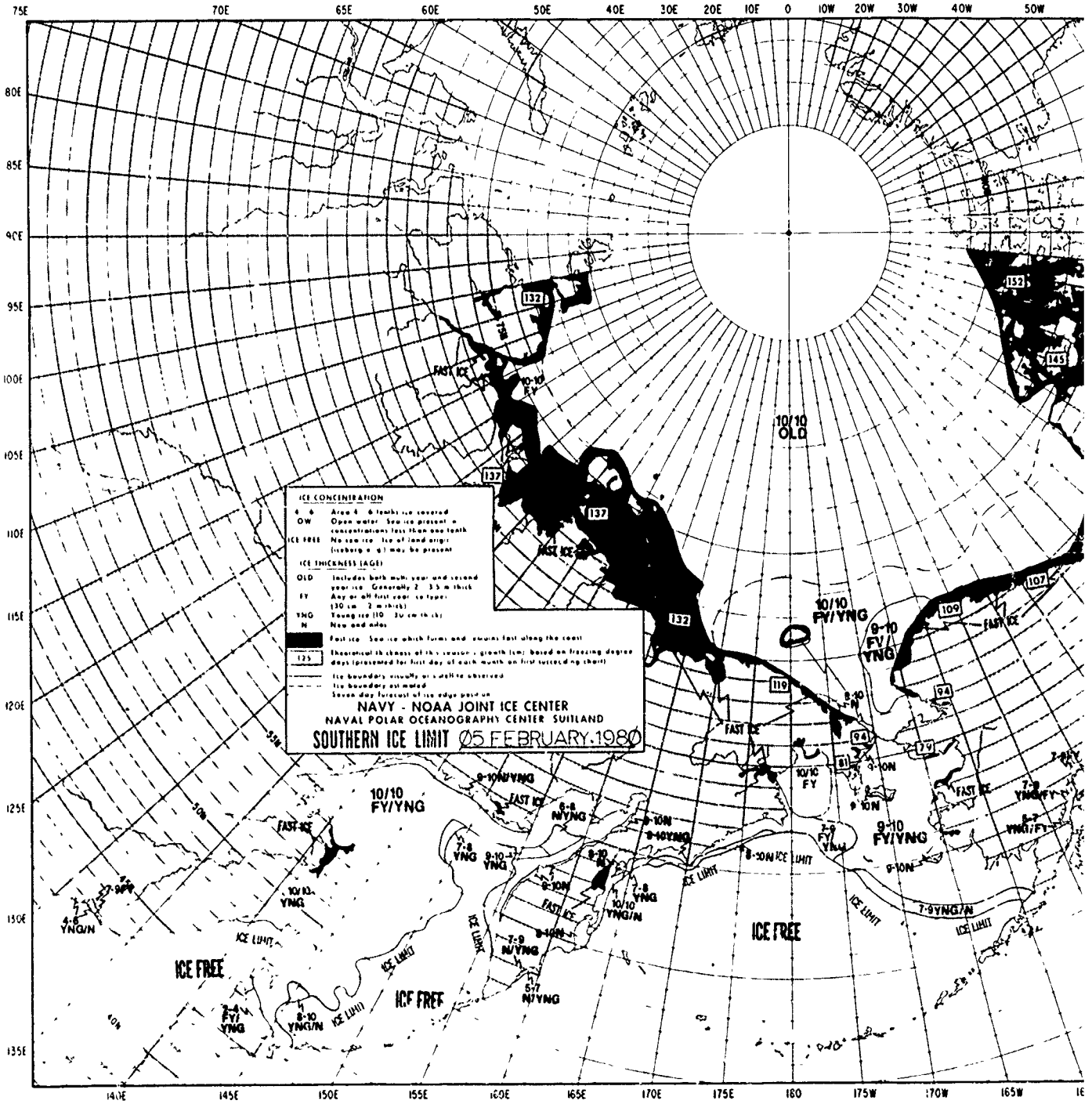
2



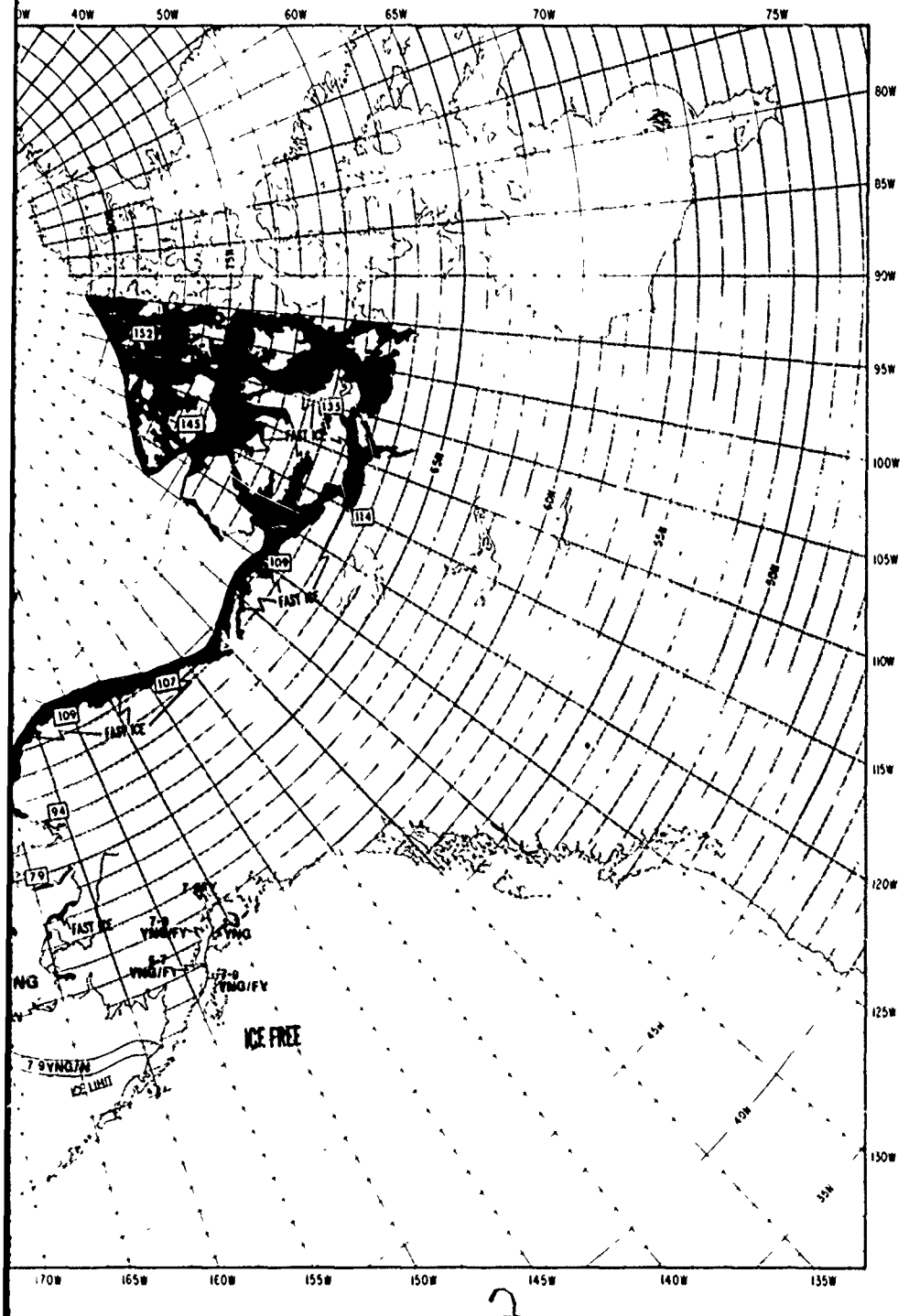
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tent)
ICE FREE No sea ice (ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3.5 m thick
FY Any or all first year ice type (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season growth (cm) based on freezing degree days (presented for first day of each month or first succeeding chart
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 29 JANUARY 1980
10/10 OLD
10/10 FY/YNG
9-10 FY/YNG
10/10 FY
FAST ICE
ICE LIMIT
ICE FREE


10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10/10
OLD
10/10
FY/YNG
FAST ICE
9-10N
10/10
FY
9-10
FY/YNG
ICE LIMIT
ICE FREE
ICE FREE

2



ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3.5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT Ø5 FEBRUARY 1980
10/10 OLD
10/10 FY/YNG
9-10 FY/YNG
10/10 FY/YNG
9-10 FY/YNG
FAST ICE
ICE LIMIT
ICE FREE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65W
70W
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105W
110W
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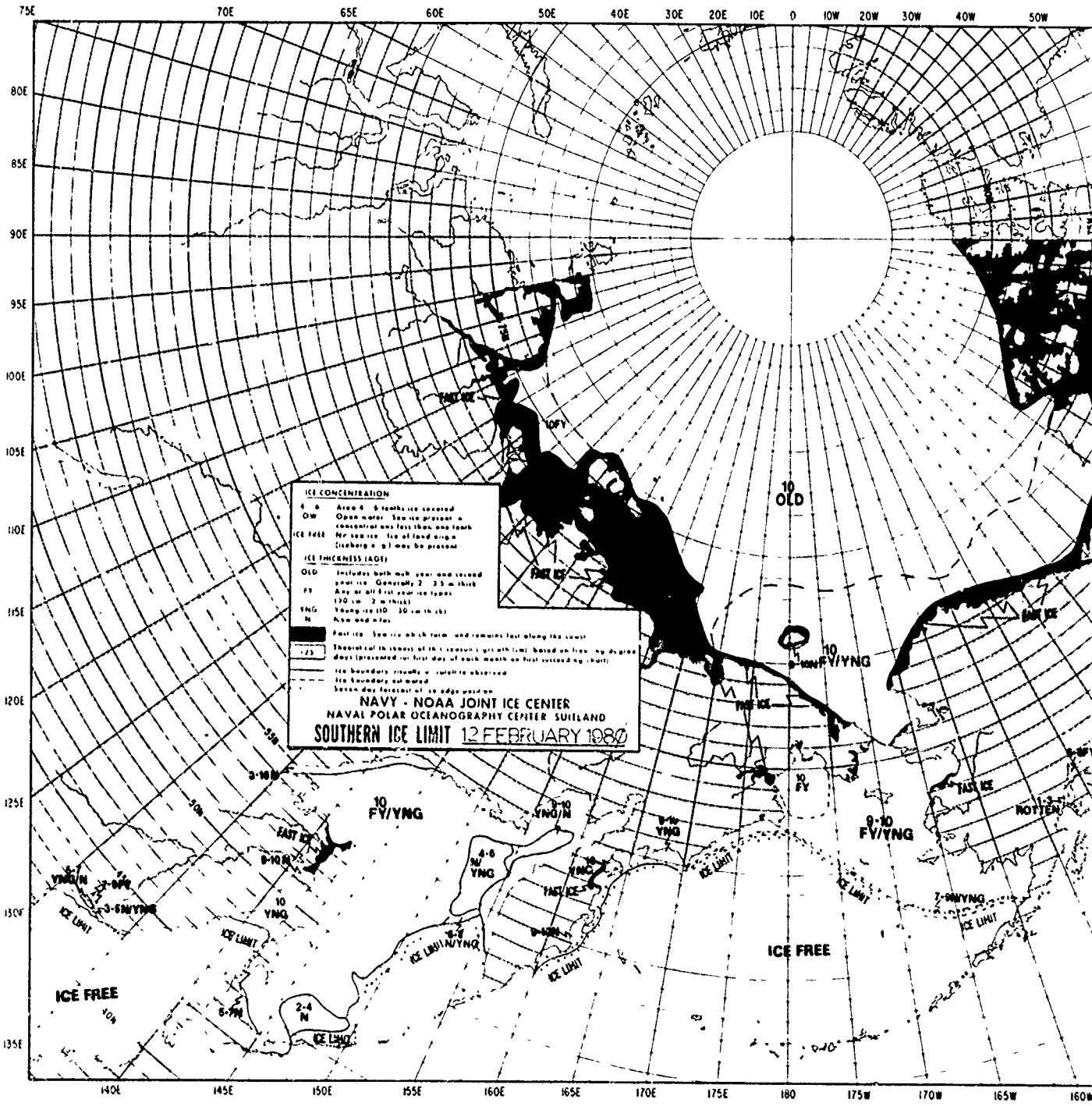
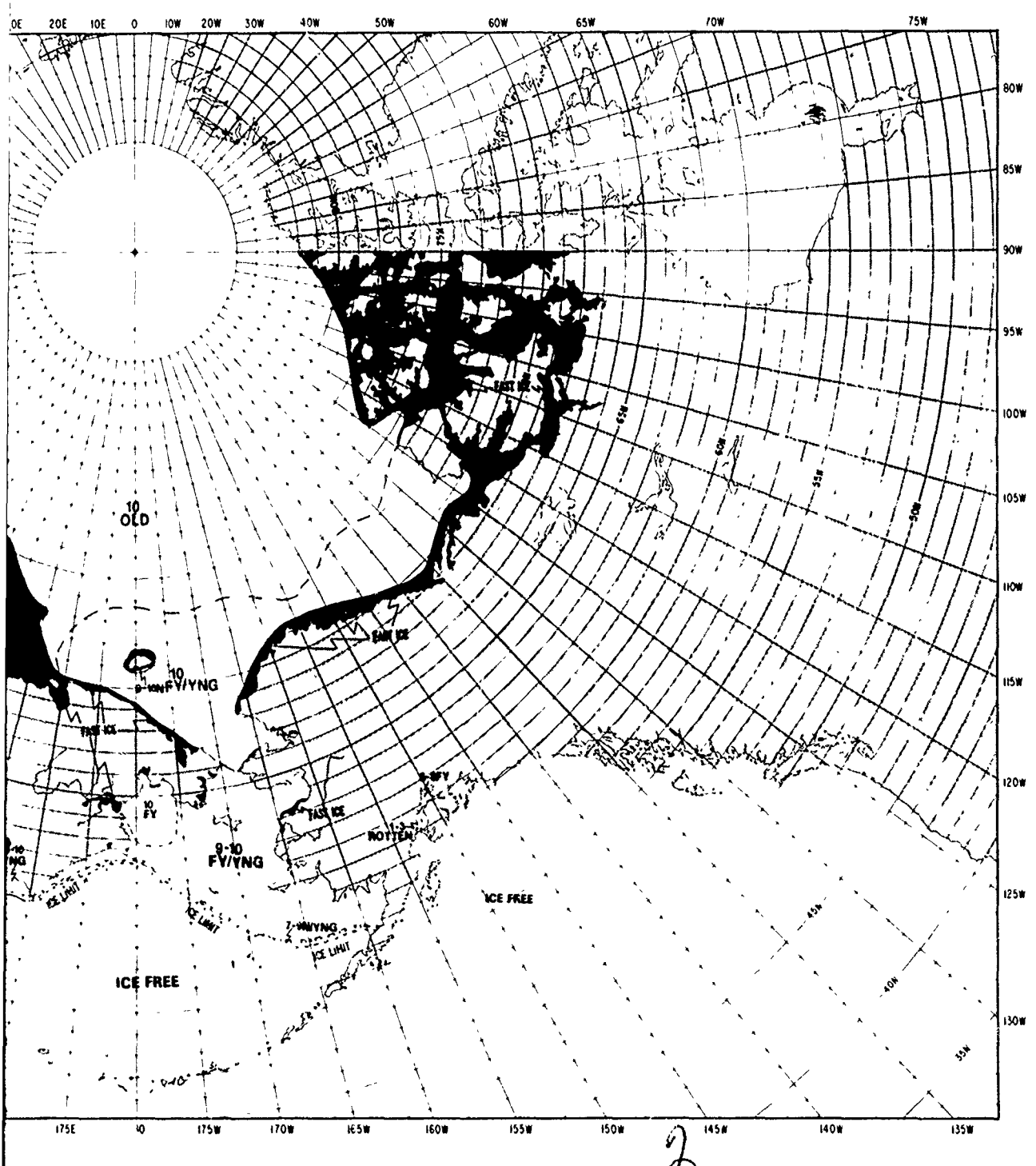
150W
170W
165W
160W
155W
150W
145W
140W
135W
132
145
133
FAST ICE
114
109
FAST ICE
107
109
FAST ICE
94
79
FAST ICE
ICE FREE
ICE LIMIT

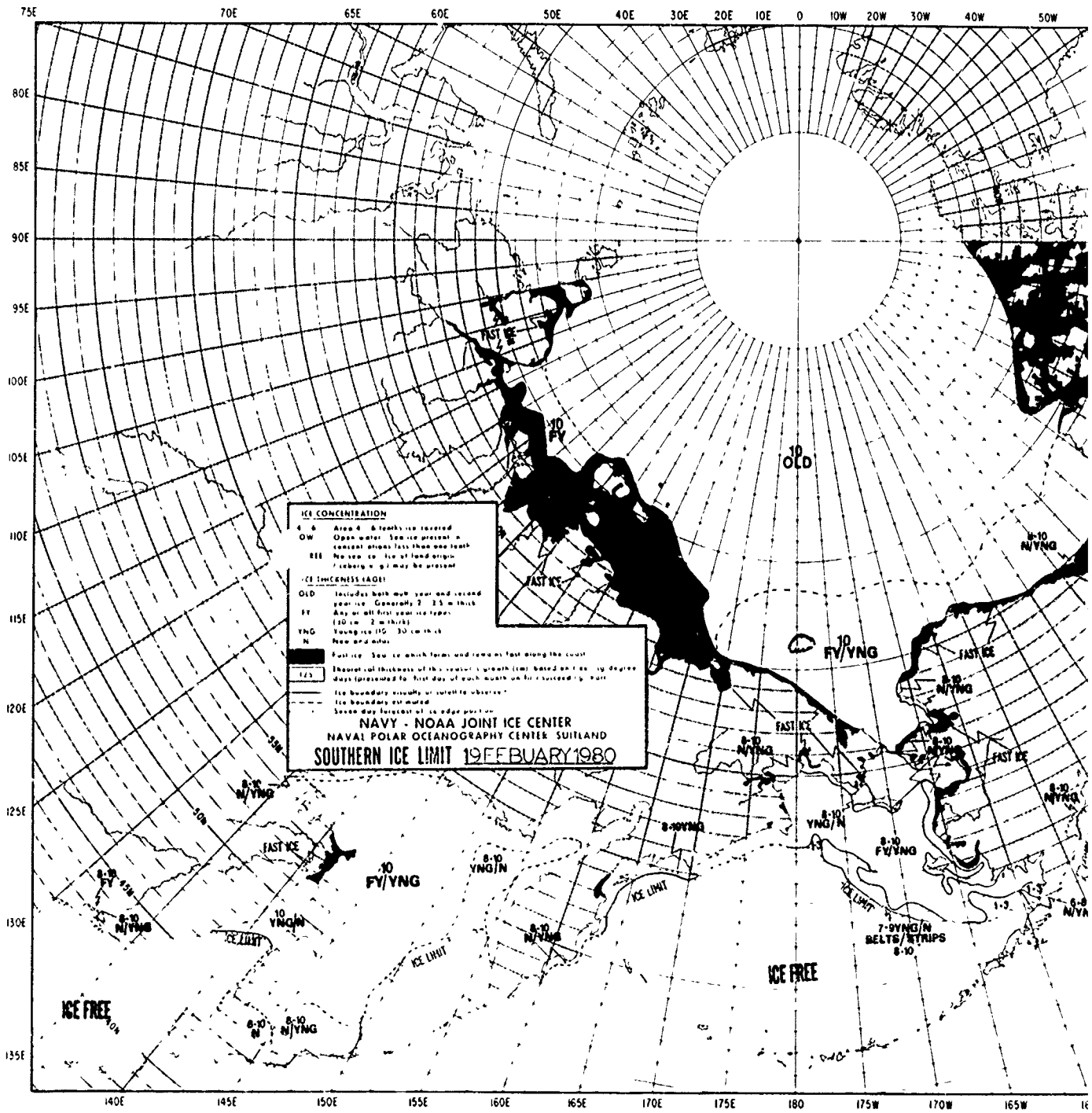
2


NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 12 FEBRUARY 1980
ICE FREE
FAST ICE
10 OLD
10 FY/YNG
9-10 FY/YNG
ICE LIMIT

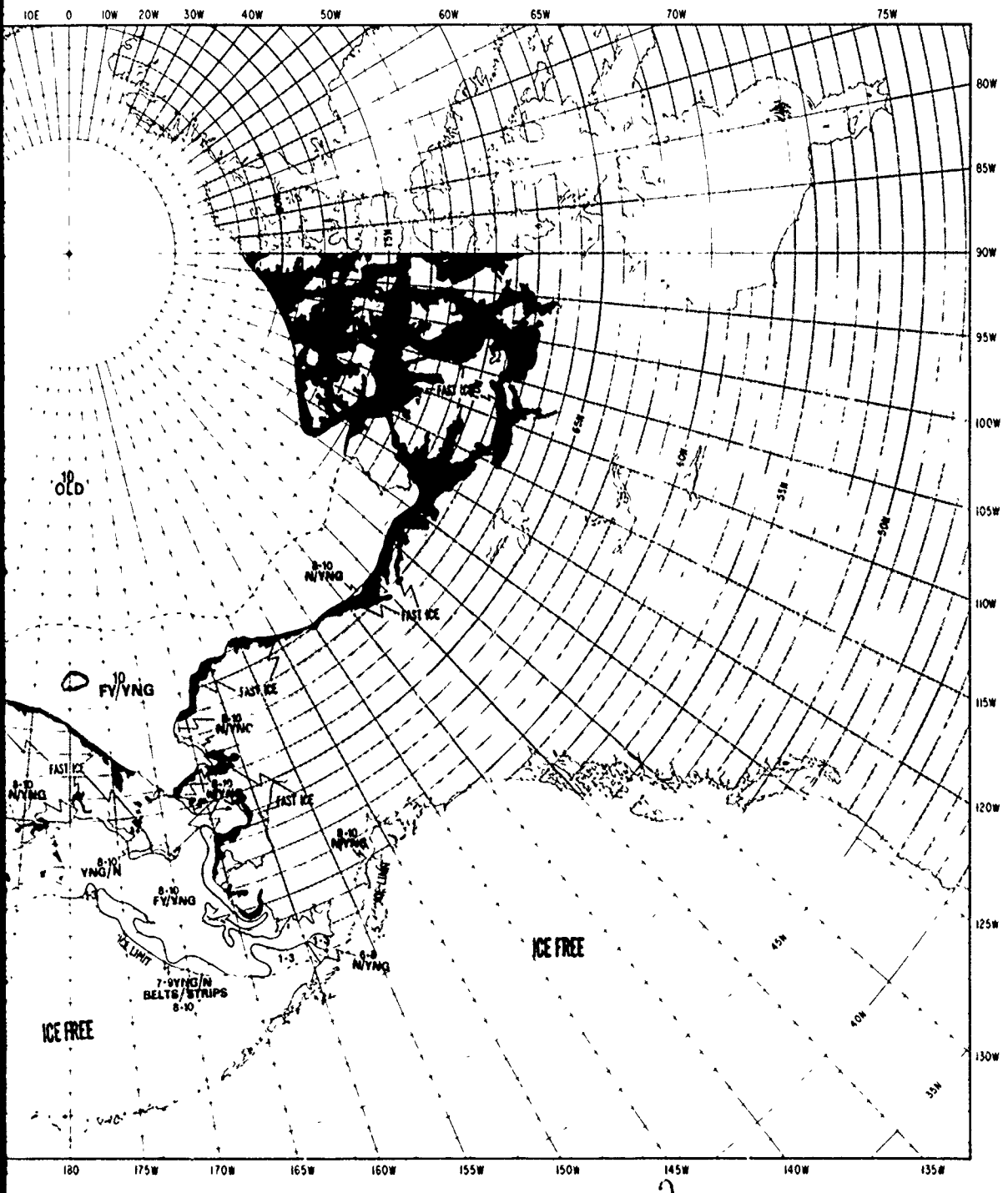


0E 20E 10E 0 10W 20W 30W 40W 50W 60W 65W 70W 75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
175E 0 175W 170W 165W 160W 155W 150W 145W 140W 135W
10 OLD
10 FY/YNG
9-10 FY/YNG
FAST ICE
ROTTEN
ICE FREE
ICE LIMIT

2



ICE CONCENTRATION
OW Open water. Sea ice present in concentrations less than one tenth
REE No sea ice. Ice of land origin (iceberg e.g.) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice. Generally 2 - 3.5 m thick
FY Any or all first year ice types (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 19 FEBUARY 1980
FAST ICE
10 FY
10 OLD
10 FY/YNG
8-10 N/YNG
8-10 YNG/N
8-10 FY/YNG
7-9YNG/N BELTS/STRIPS 8-10
ICE LIMIT
ICE FREE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10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
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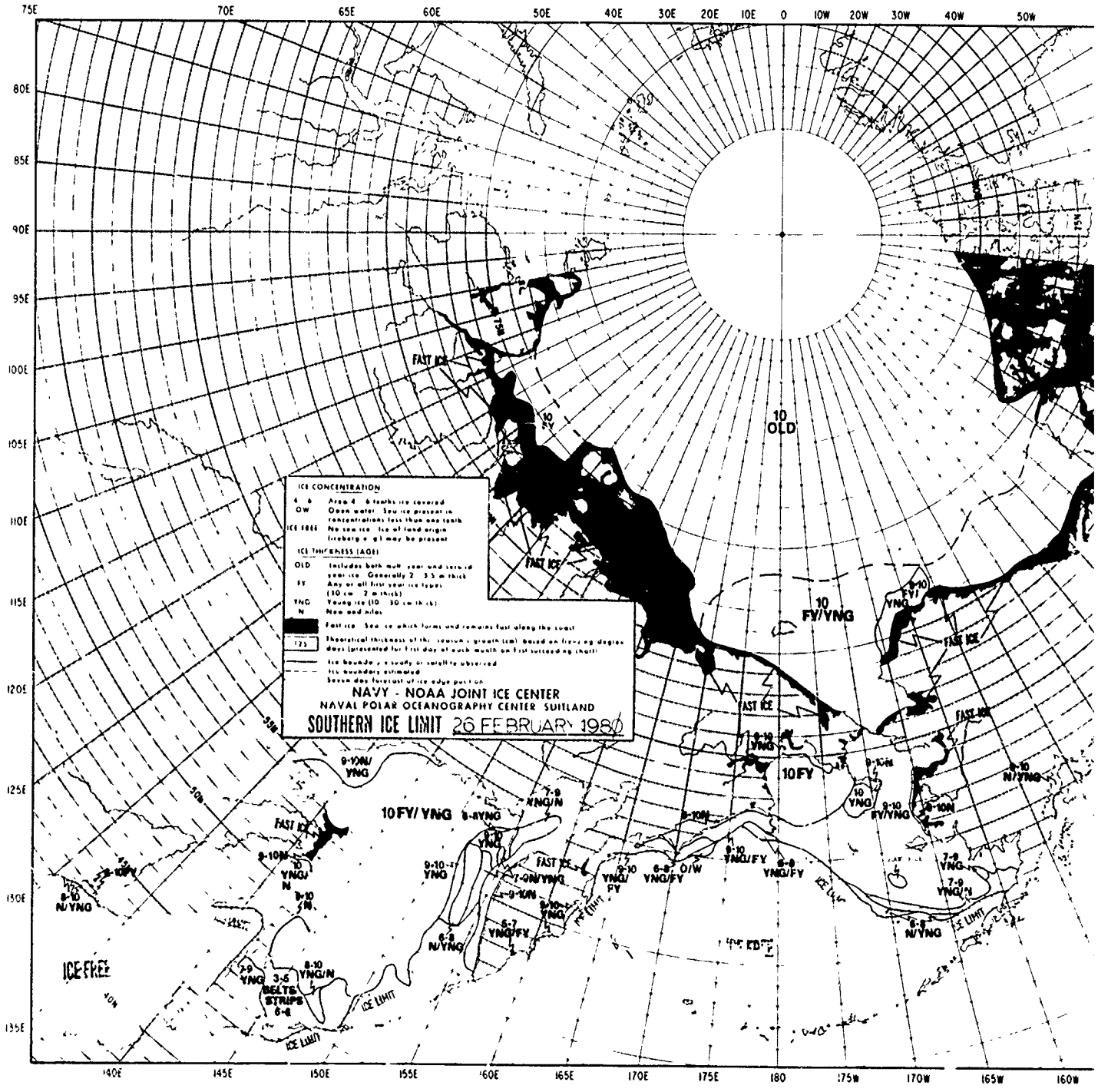
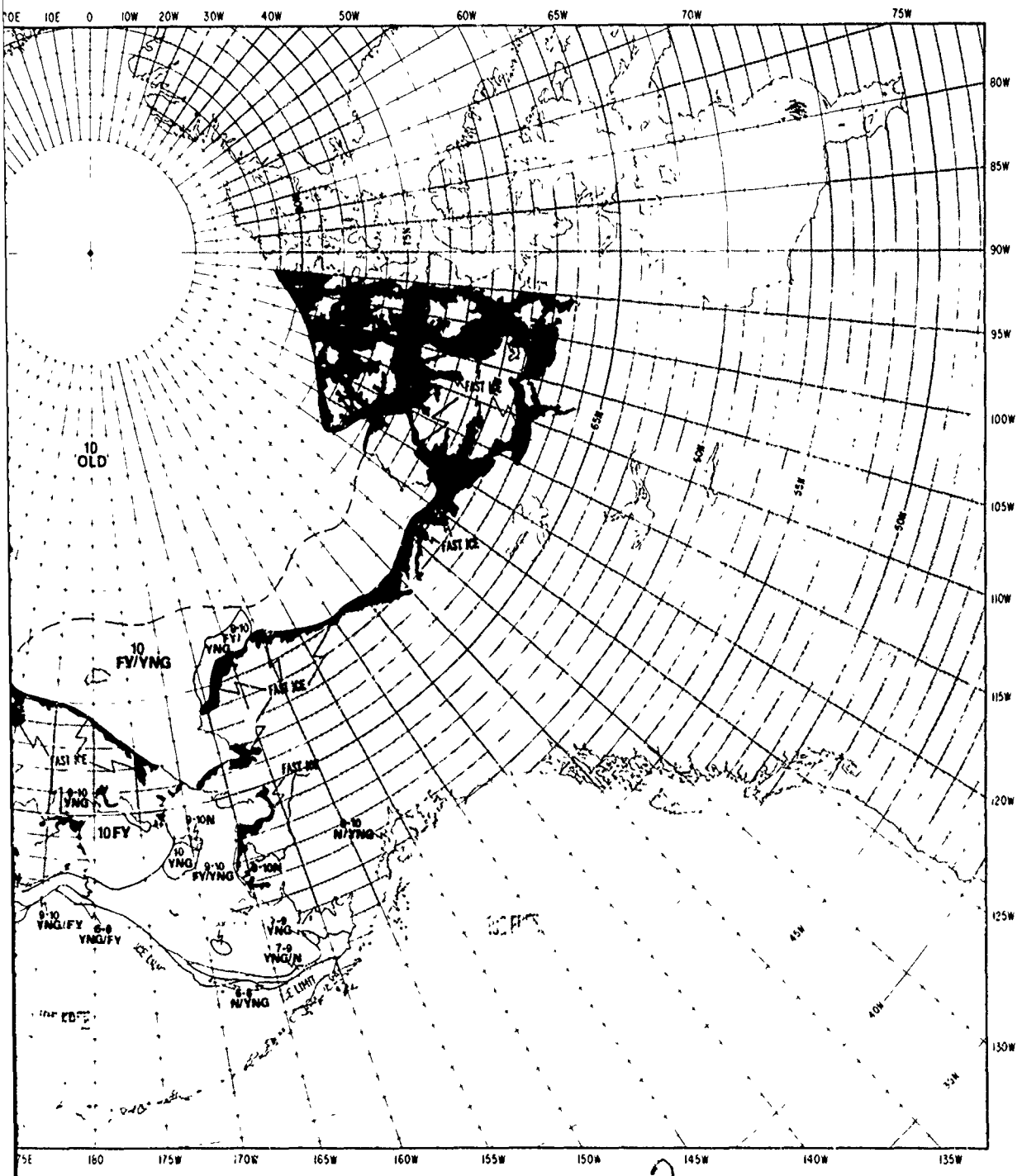
105W
110W
115W
120W
125W
130W
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10 OLD
FAST ICE
8-10 N/VNG
10 FV/VNG
FAST ICE
8-10 N/VNG
FAST ICE
8-10 N/VNG
8-10 N/VNG
8-10 VNG/N
8-10 FV/VNG
ICE LIMIT
1-3
8-9 N/VNG
7-9 VNG/N BELTS/STRIPS 8-10
ICE FREE
ICE FREE
65N
60N
55N
50N
45N
40N
35N

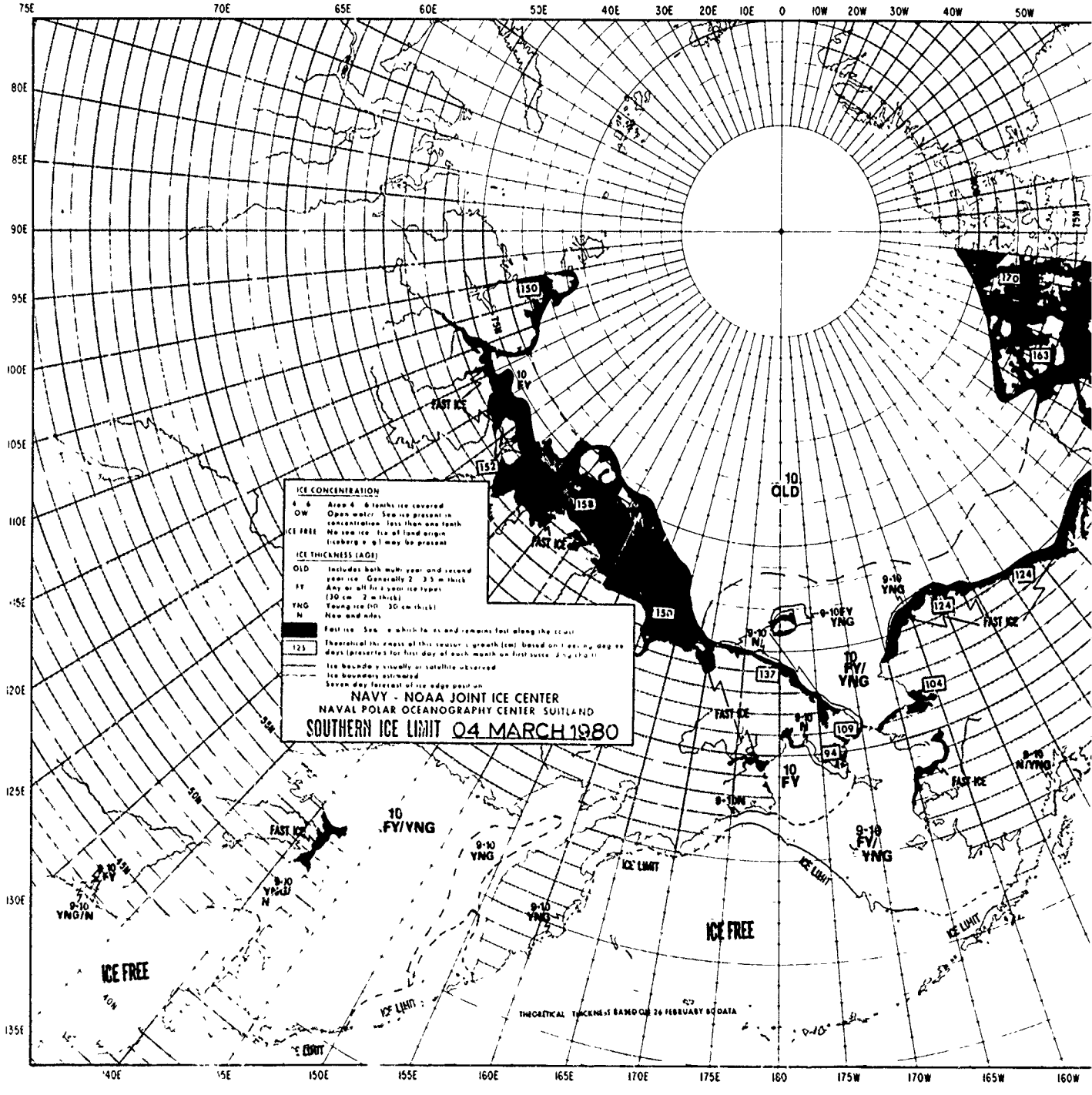
2



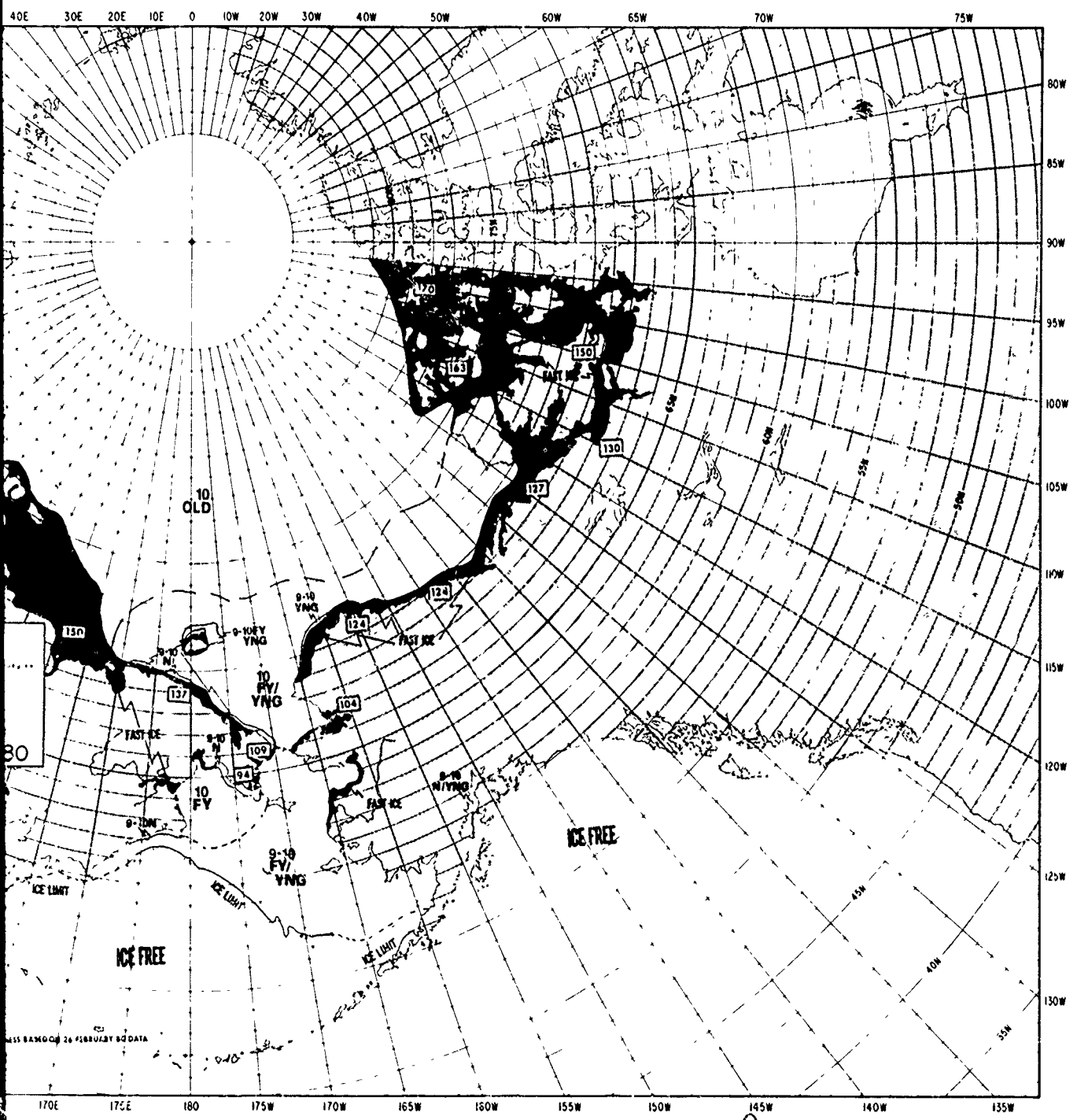
ICE CONCENTRATION
4 - 6 Area 4 - 6 tenths ice covered
OW Open water. Sea ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (iceberg e.g.) may be present
ICE THICKNESS (AGE)
OLD Includes both multi-year and second-year ice. Generally 2 - 3.5 m thick
FY Any or all first-year ice types (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 26 FEBRUARY 1980
FAST ICE
10 OLD
10 FY/YNG
10 FY
10 FY/ YNG
ICE FREE
ICE LIMIT
BELTS STRIPS


10E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
160
175W
170W
165W
160W
155W
150W
145W
140W
135W
10
OLD
10
FY/YNG
FAST ICE
FAST ICE
FAST ICE
FAST ICE
9-10
FY/
YNG
9-10
YNG
10FY
9-10N
10
YNG/
9-10
FY/YNG
9-10N
9-10N/YNG
9-10
YNG/FY
6-8
YNG/FY
7-9
YNG
7-9
YNG/N
6-8
N/YNG
ICE LIMIT
65N
60N
55N
50N
45N
40N
35N

2



ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentration less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3.5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 04 MARCH 1980
ICE FREE
ICE LIMIT
FAST ICE
10 OLD
10 FY
10 FY/YNG
9-10 YNG
9-10 FY/YNG
9-10 N/YNG
9-10 YNG/N
THEORETICAL THICKNESS BASED ON 26 FEBRUARY 80 DATA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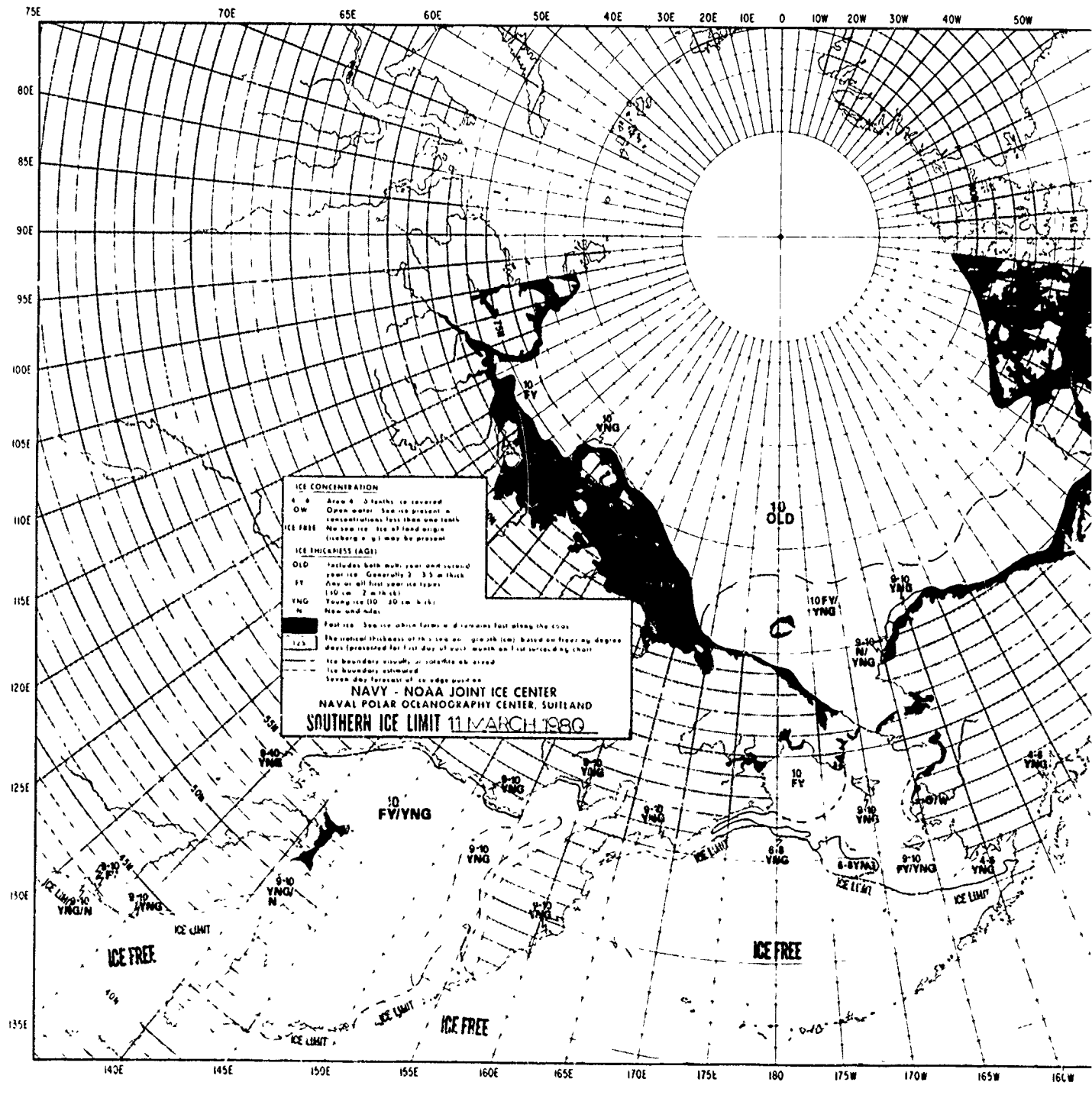
30E
20E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
170E
175E
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10 OLD
10 FY/ YNG
10 FY
9-10 FY/ YNG
9-10 N/YNG
FAST ICE
ICE FREE
ICE LIMIT
120
150
165
130
127
124
104
109
94
137

2



ICE CONCENTRATION
OW Open water. Sea ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (iceberg e.g.) may be present
ICE THICKNESS (AGE)
OLD Includes both multi-year and second year ice. Generally 2 - 3.5 m thick
FY Any or all first year ice types (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 11 MARCH 1980
10 OLD
10 FY
10 YNG
10 FY/YNG
9-10 YNG
9-10 N/YNG
9-10 YNG/N
9-10 FY/YNG
6-8 YNG
4-6 YNG
ICE LIMIT
ICE FREE
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
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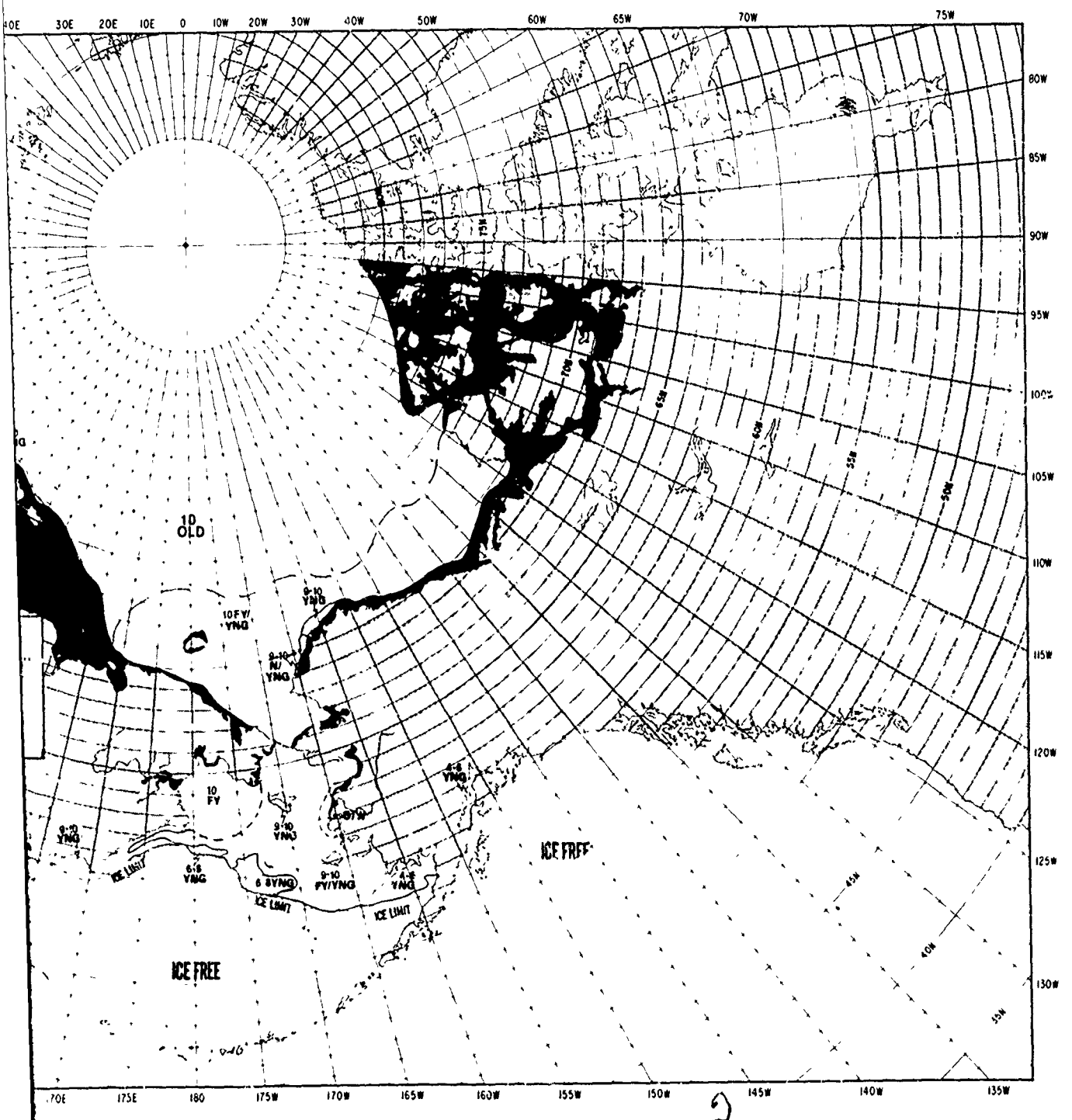
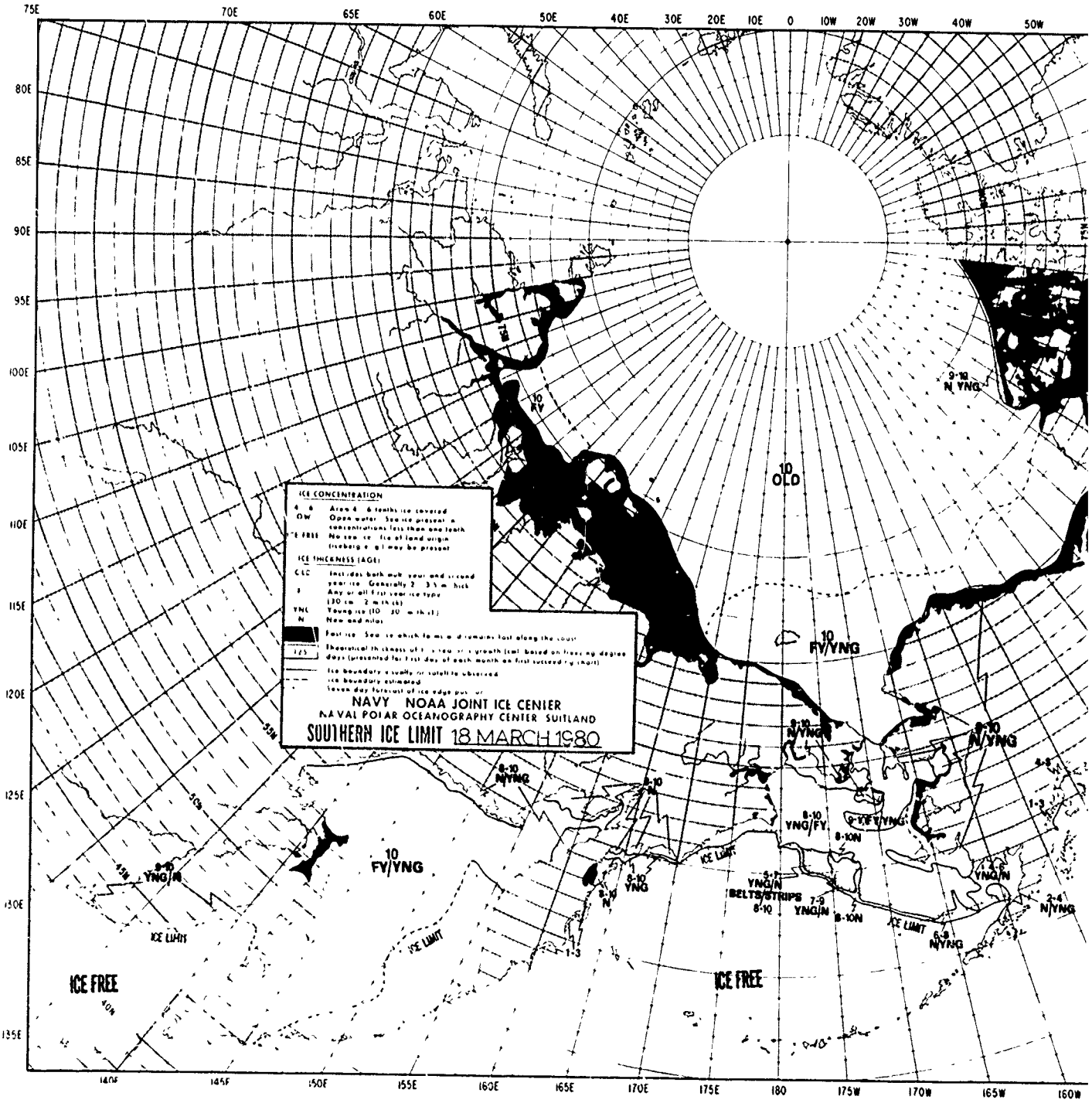
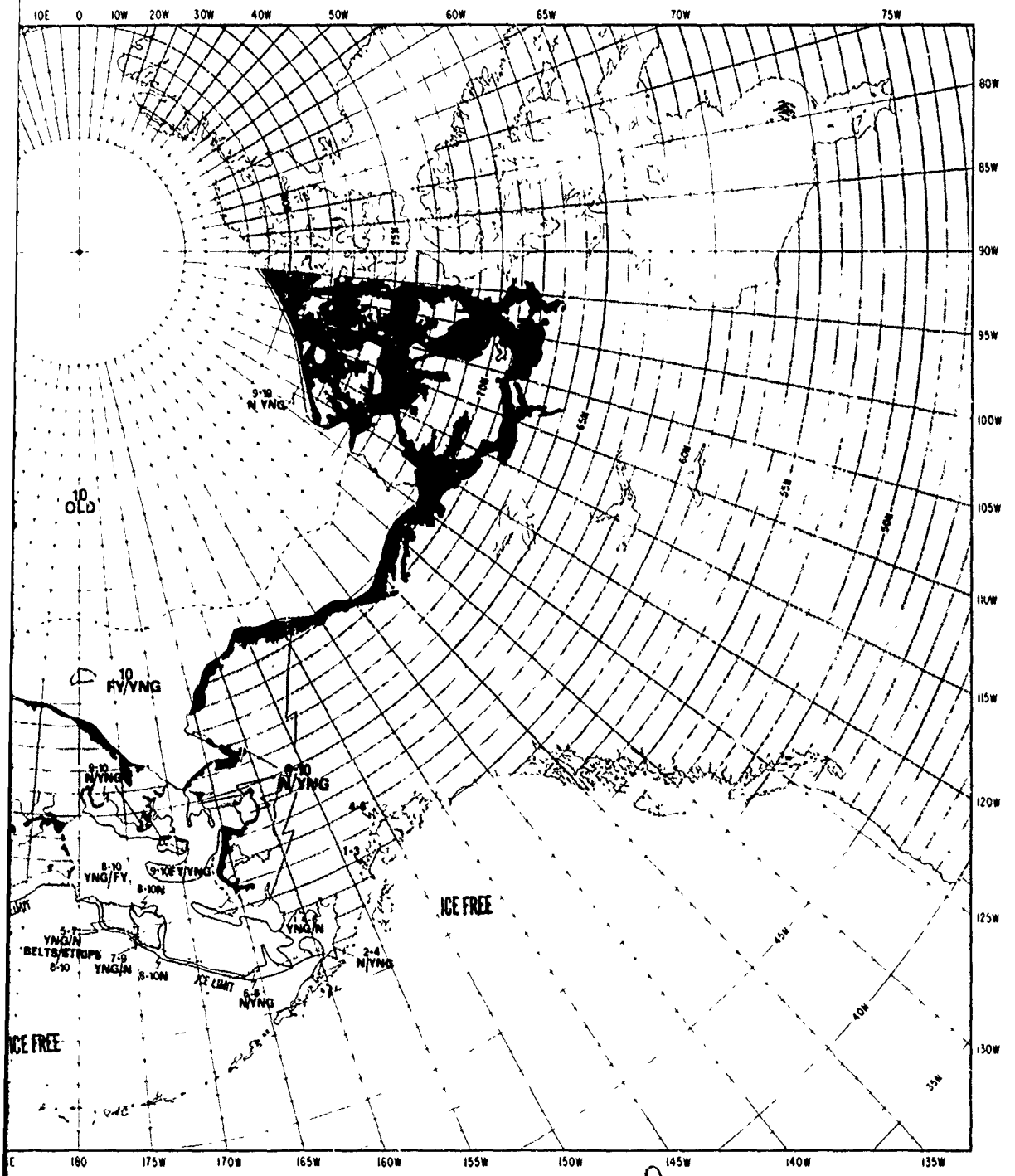
175E
180
175W
170W
165W
160W

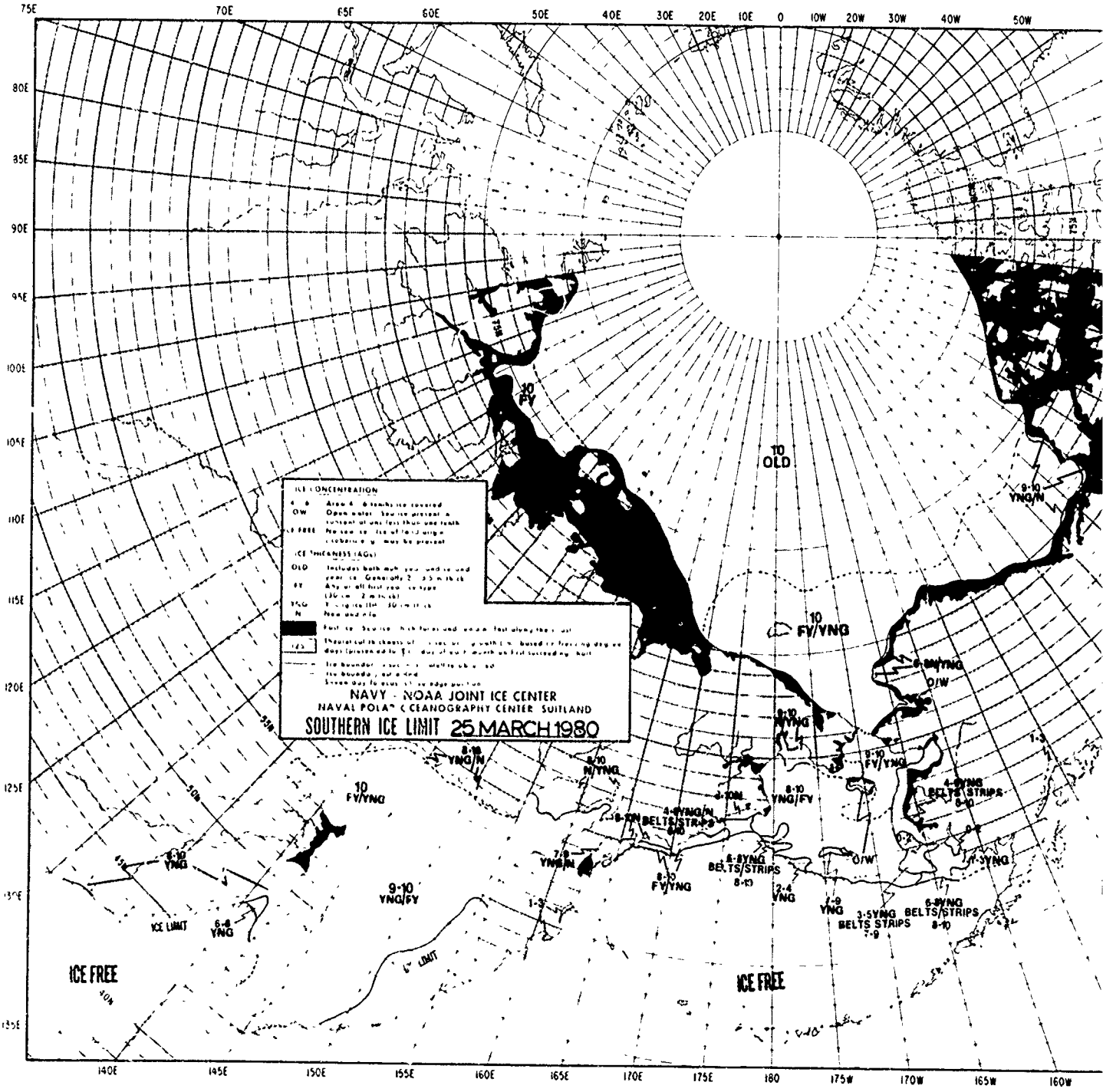

40E
30E
20E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
70E
175E
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
1D
OLD
10F Y/
YNG
9-10
YNG
9-10 F/
YNG
10
FY
9-10
YNG
9-10
YNG
6-8
YNG
6 8YNG
9-10
FY/YNG
4-6
YNG
4-6
YNG
ICE LIMIT
ICE LIMIT
ICE LIMIT
ICE FREE
ICE FREE

2

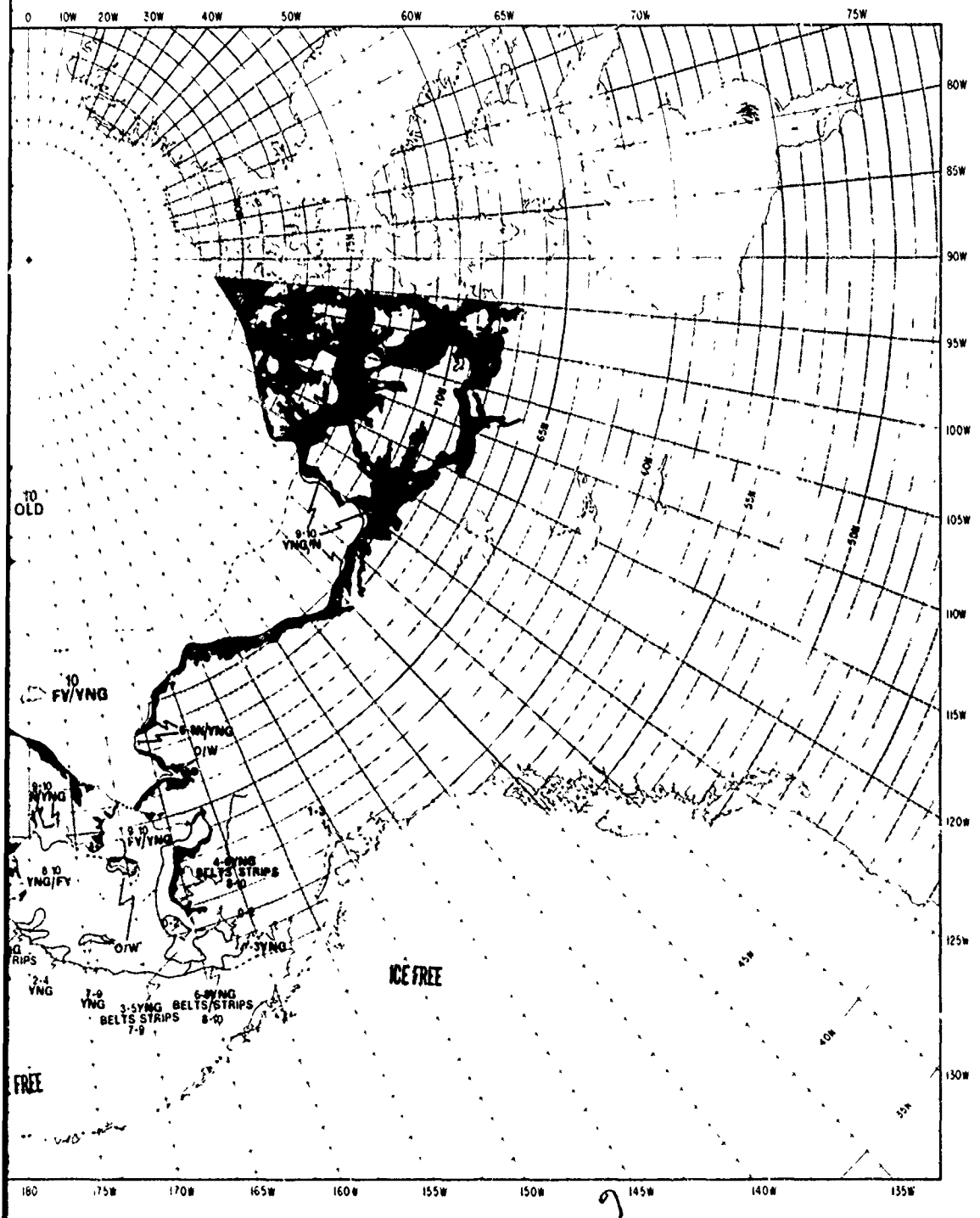


ICE CONCENTRATION
4 - 6 Area 4 - 6 tenths ice covered
OW Open water. Sea ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (iceberg e.g.) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice. Generally 2 - 3.5 m thick
F Any or all first year ice type (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this sea ice growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 18 MARCH 1980
ICE FREE
ICE LIMIT
10 OLD
10 FY/YNG
10 FY
9-10 N YNG
9-10 N/YNG
8-10 N/YNG
8-10 YNG/FY
9-10 FY/YNG
8-10N
8-10 YNG
8-10 N
5-7 YNG/N BELTS/STRIPS
7-9 YNG/N
6-8 N/YNG
4-6 YNG/N
2-4 N/YNG
1-3
4-8
9-10 YNG/N

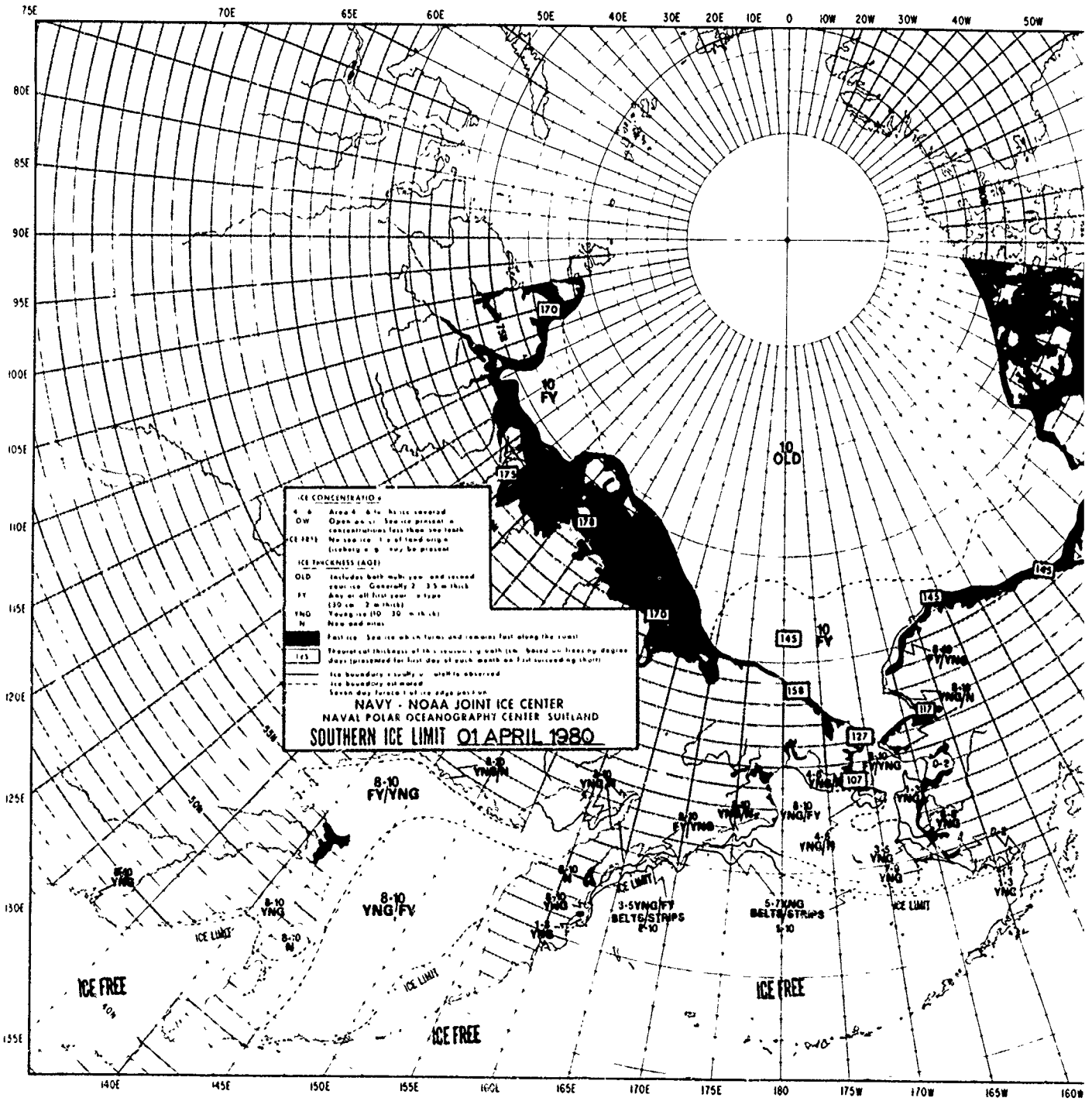

10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
180
9-10 N YNG
10 OLD
10 FY/YNG
9-10 N/YNG
9-10 N/YNG
8-10 YNG/FY
9-10 F/YNG
8-10N
5-7 YNG/N BELTS/STRIPS 8-10
7-9 YNG/N
8-10N
ICE LIMIT
6-8 N/YNG
4-6
1-3
ICE FREE
4-6 YNG/N
2-4 N/YNG
ICE FREE



NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 25 MARCH 1980
ICE CONCENTRATION
ICE THICKNESS (AGE)
ICE FREE
ICE LIMIT
10 FY
10 OLD
10 FY/YNG
9-10 YNG/FY
9-10 YNG/N
8-10 YNG/N
8-10 N/YNG
8-10 YNG/FY
8-10 FY/YNG
9-10 FY/YNG
8-10 YNG
6-8 YNG
7-9 YNG/N
4-8YNG/N BELTS/STRIPS
6-8YNG BELTS/STRIPS
2-4 YNG
7-9 YNG
3-5YNG BELTS STRIPS
6-8YNG BELTS/STRIPS
4-8YNG BELTS STRIPS
O/W


0 10W 20W 30W 40W 50W 60W 65W 70W 75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
180 175W 170W 165W 160W 155W 150W 145W 140W 135W
TO OLD
9-10 YNG/N
10 FV/YNG
8-10N/YNG O/W
9-10 N/YNG
9-10 FV/YNG
8-10 YNG/FY
4-8YNG BELTS/STRIPS 8-10
O/W
3-5YNG
ICE FREE
2-4 YNG
7-9 YNG
3-5YNG BELTS STRIPS 7-9
6-8YNG BELTS/STRIPS 8-10
FREE

2


NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 01 APRIL 1980
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
8-10 FY/YNG
8-10 YNG/FV
10 OLD
10 FY
3-5 YNG/FY BELTS/STRIPS 8-10
5-7 YNG BELTS/STRIPS 8-10
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
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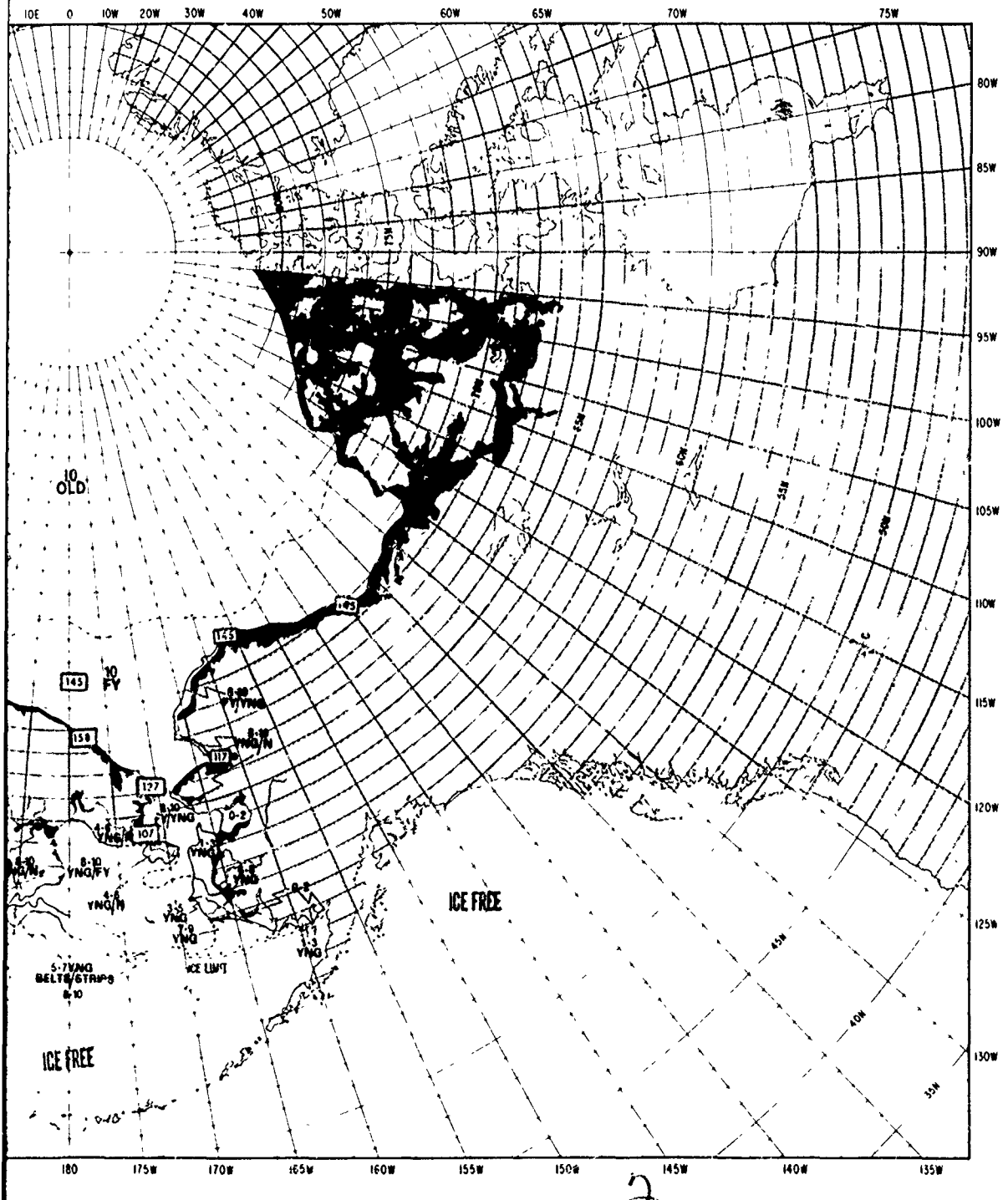
175W
170W
165W
160W


10E
0
10W
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90W
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105W
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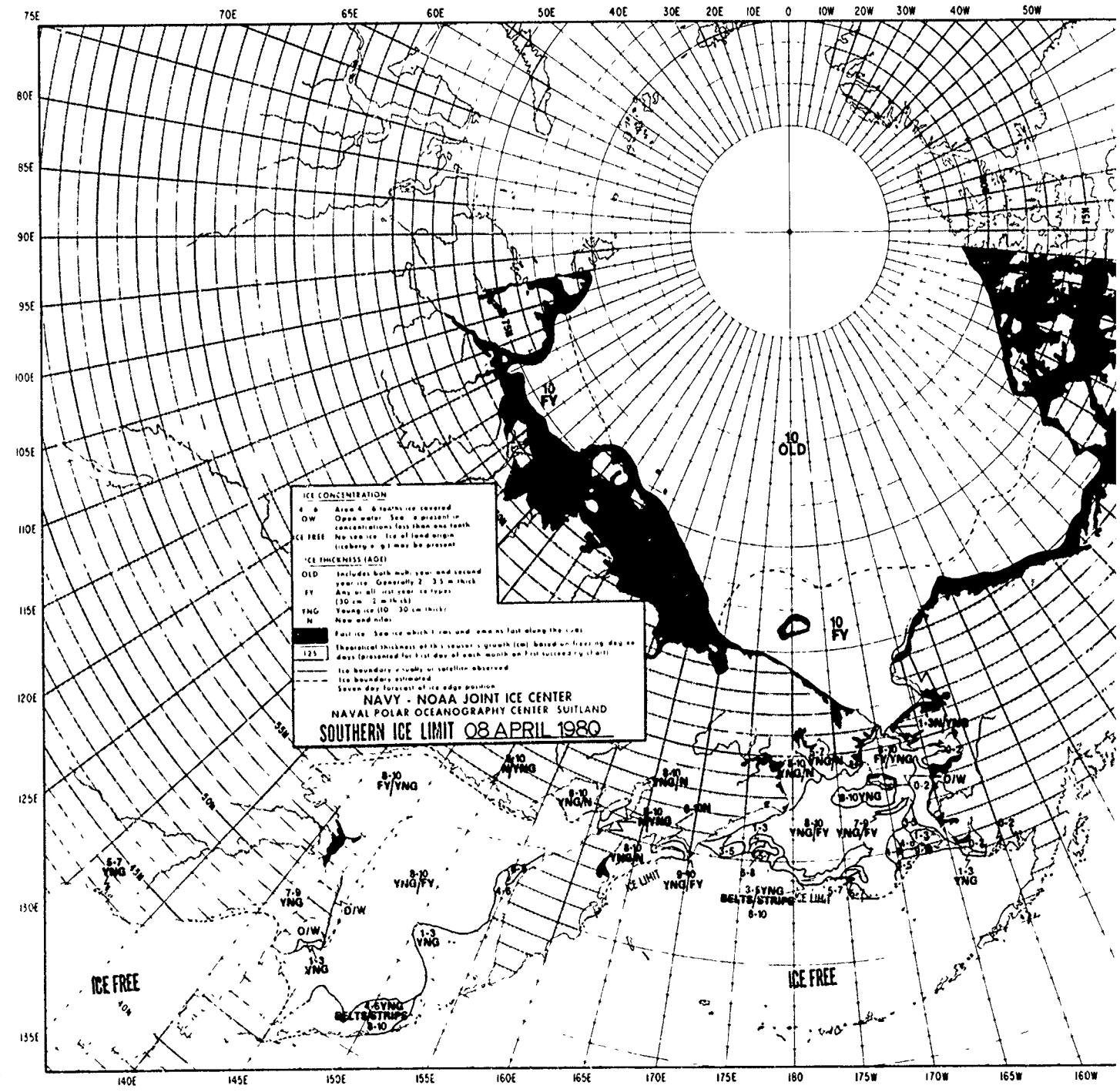
115W
120W
125W
130W
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10 OLD
10 FY
145
158
127
107
117
ICE FREE
ICE FREE
ICE LIMIT
5-7YNG BELTS/STRIPS 8-10
8-10 YNG/FY
4-6 YNG/N
3-5 YNG
7-9 YNG
1-3 YNG
0-2
8-10 FY/YNG
8-10 YNG/N
45N
40N
35N

2


75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
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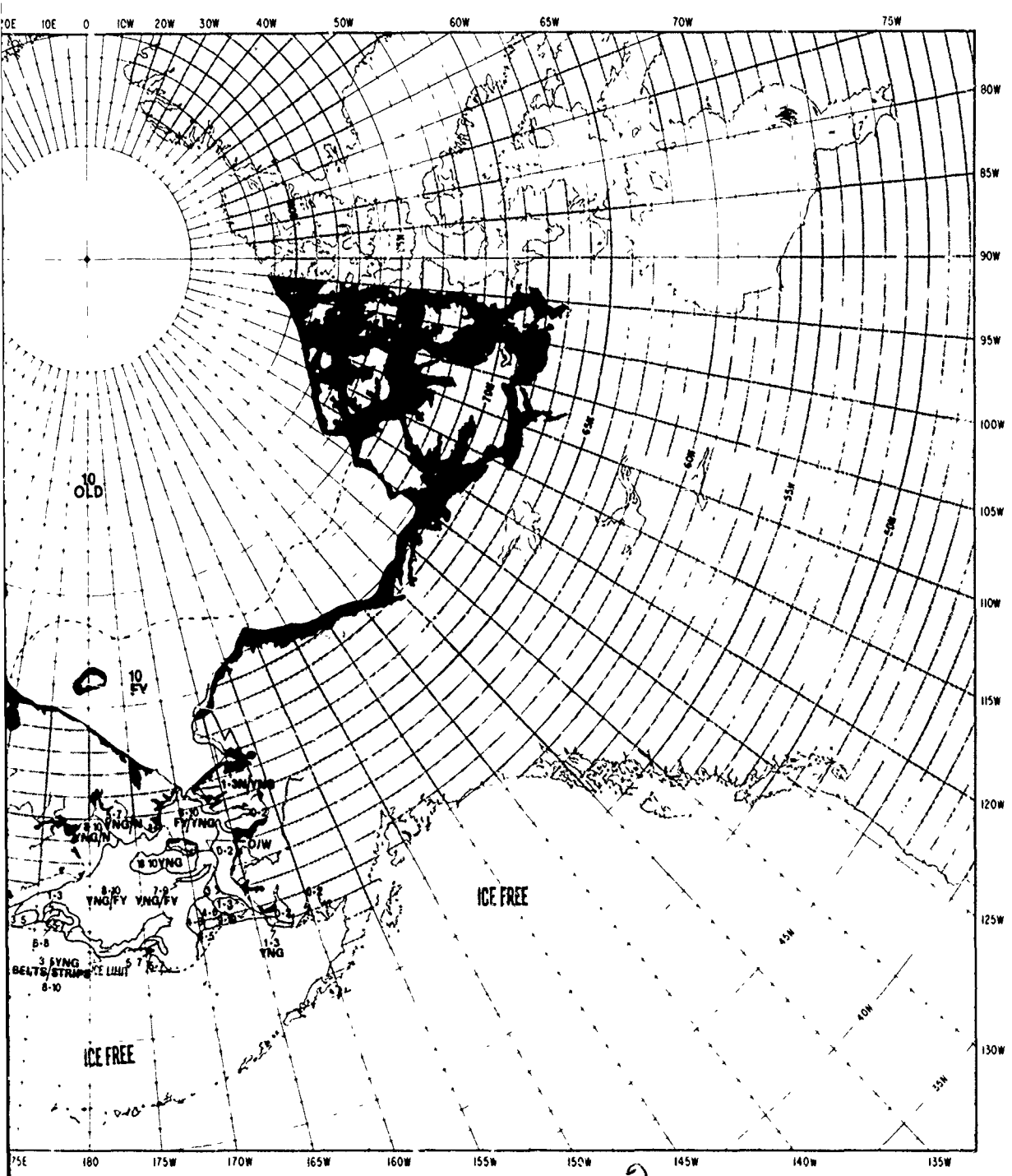
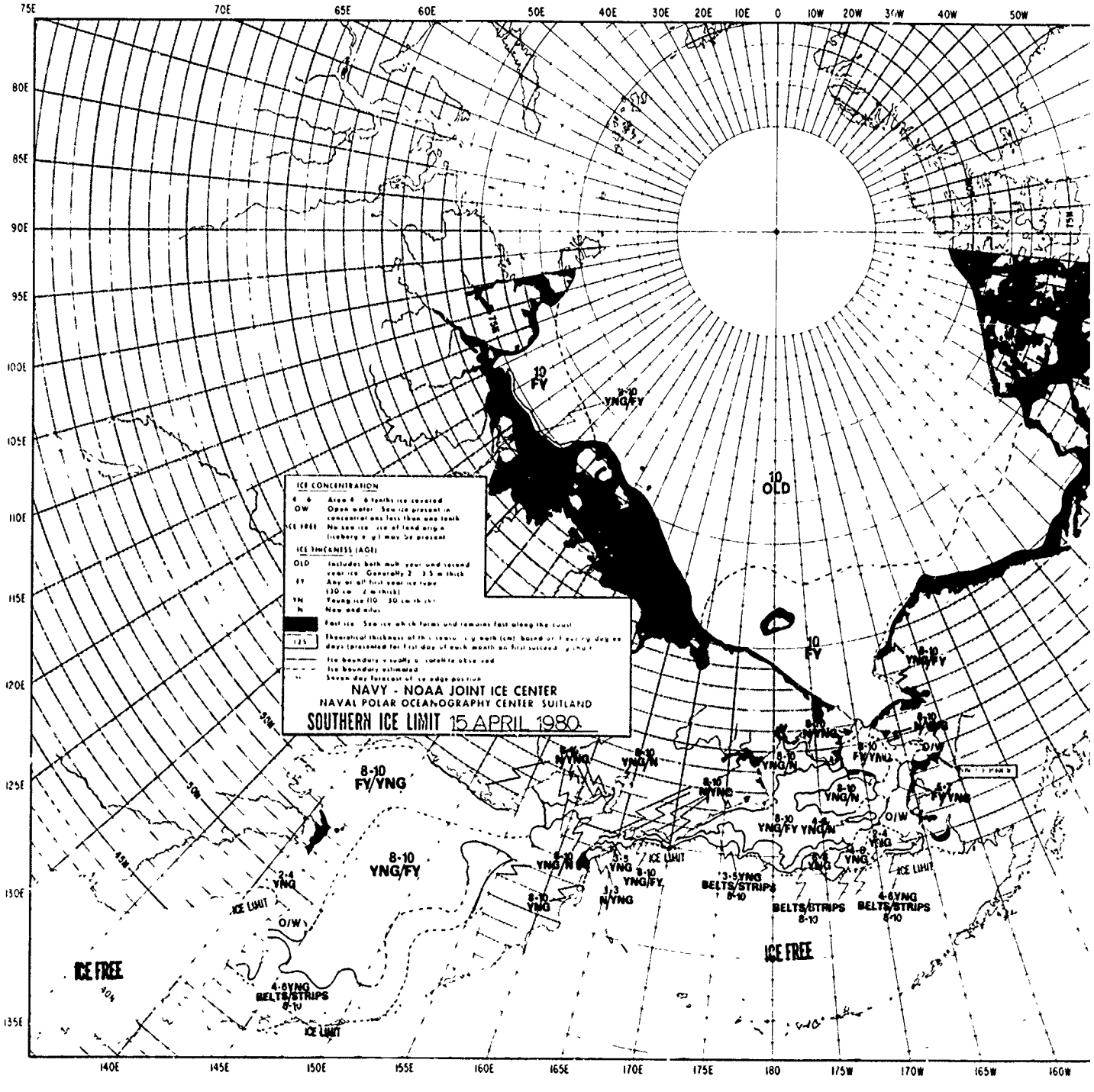
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W
ICE CONCENTRATION
OW Open water
ICE FREE No sea ice
ICE THICKNESS (AGE)
OLD Includes both multi-year and second year ice
FY
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice
Ice boundary visually or satellite observed
Ice boundary estimated
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 08 APRIL 1980
10 FY
10 OLD
10 FY
ICE FREE
ICE FREE
ICE LIMIT
ICE LIMIT
O/W
O/W
O/W
O/W
1-3 YNG
1-3 YNG
1-3 YNG
7-9 YNG
5-7 YNG
4-6 YNG BELTS/STRIPS 8-10
3-5 YNG BELTS/STRIPS 8-10
8-10 FY/YNG
8-10 YNG/FY
8-10 YNG/FY
8-10 YNG/FY
8-10 YNG/N
8-10 YNG/N
8-10 YNG/N
8-10 YNG/N
8-10 YNG/N
8-10 FY/YNG
8-10 FY/YNG
8-10 YNG
7-9 YNG/FY
7-9 YNG/FY
1-3 YNG
1-3 YNG
0-2 O/W
0-2
0-2
0-2

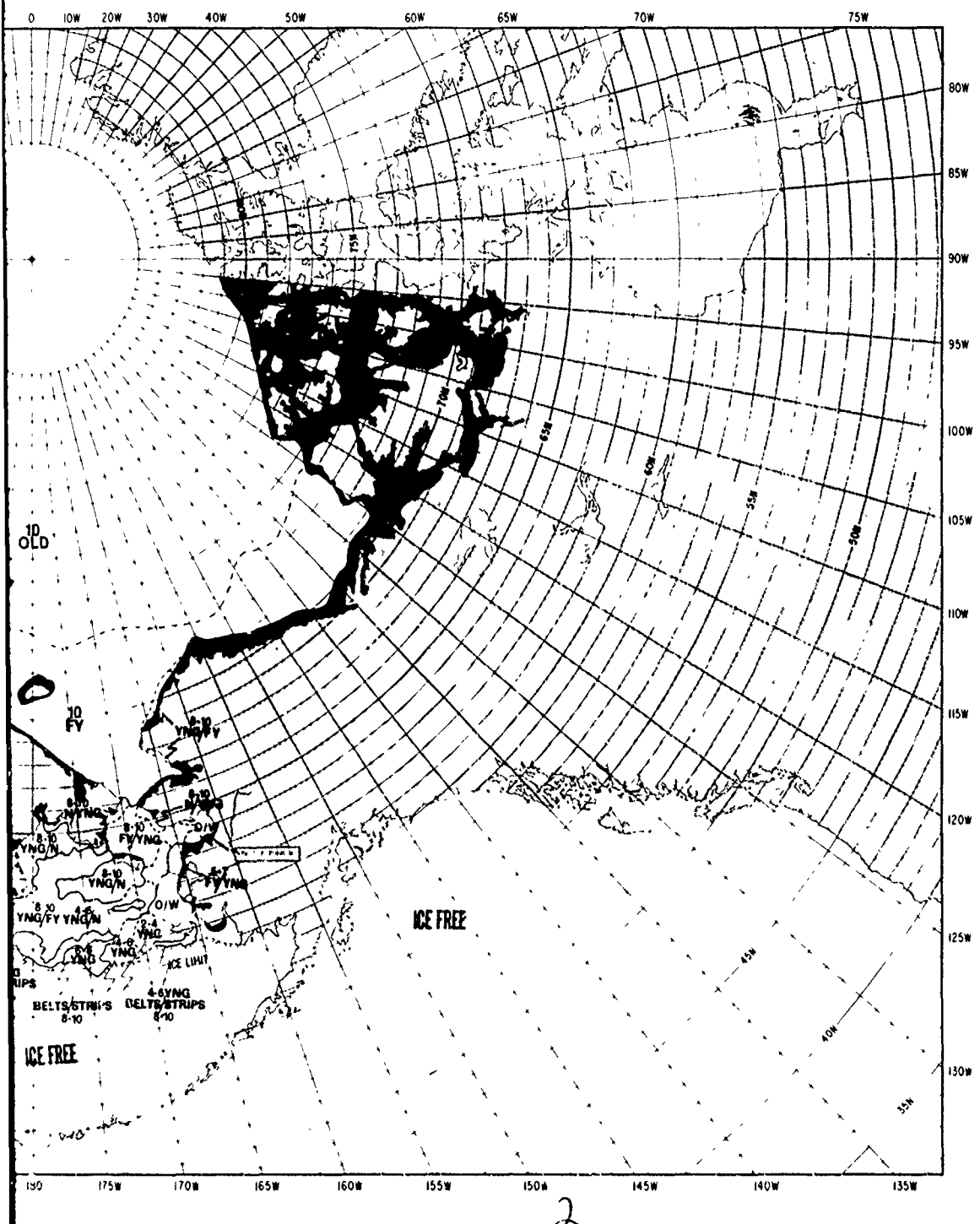


10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10 OLD
10 FY
ICE FREE
ICE FREE
1-3N/YNG
FY/YNG
O/W
YNG/N
YNG/FY
YNG/FY
YNG
BELTS/STRIPS

2



ICE CONCENTRATION
OW Open water. Sea ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (iceberg e.g.) may be present
ICE THICKNESS (AGE)
OLD Includes both multi-year and second year ice. Generally 2 - 3.5 m thick
FY Any or all first year ice type (30 cm - 2 m thick)
YN Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 15 APRIL 1980
10 FY
8-10 YNG/FY
10 OLD
8-10 FY/YNG
8-10 YNG/FY
2-4 YNG
O/W
ICE LIMIT
ICE FREE
4-6YNG BELTS/STRIPS 8-10
3-5YNG BELTS/STRIPS 8-10
BELTS/STRIPS 8-10
4-6YNG BELTS/STRIPS 8-10



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10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
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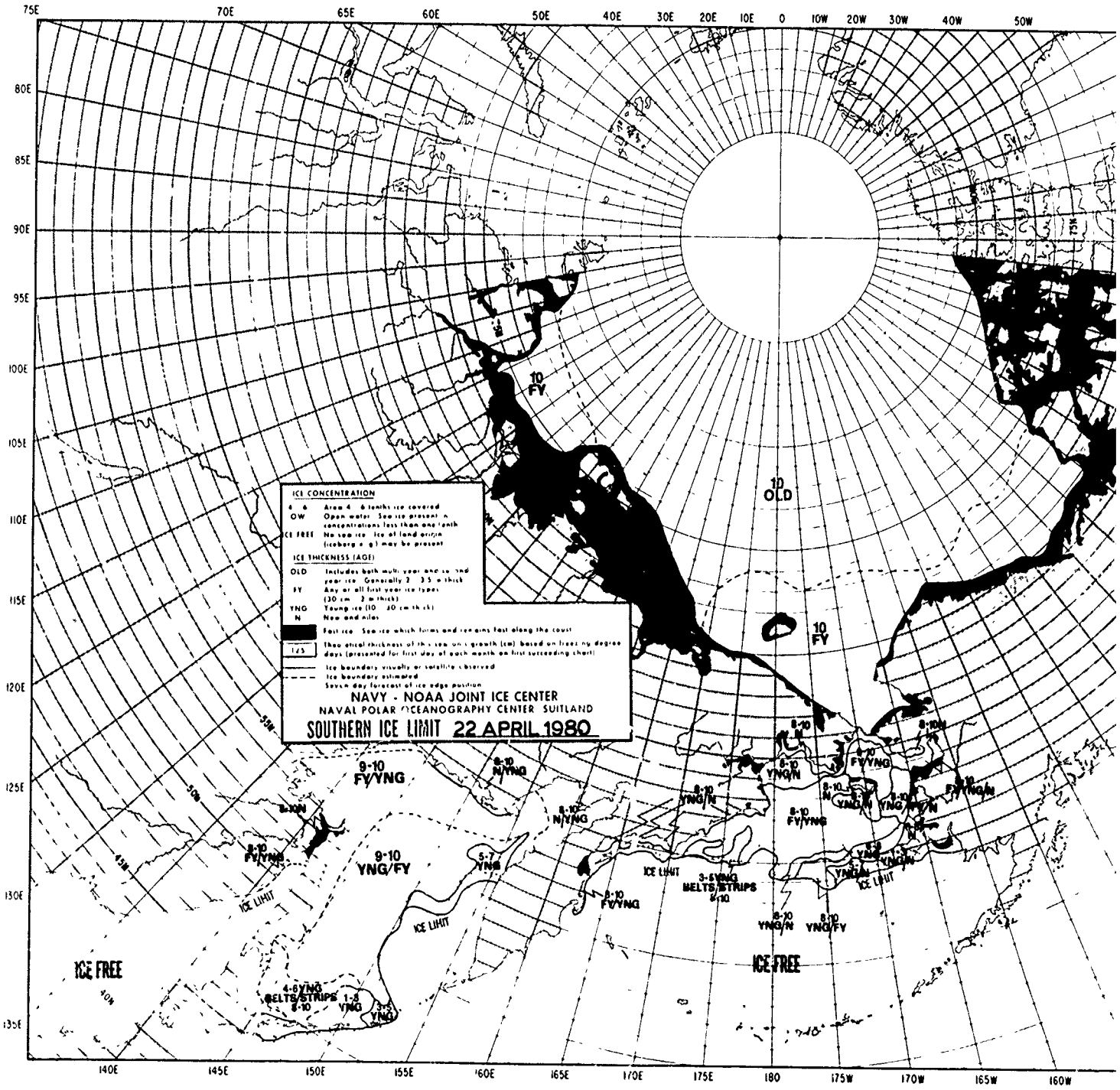
110W
115W
120W
125W
130W
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10
OLD
10
FY
8-10
YNG/FY
8-10
FY/YNG
8-10
YNG/N
8-10
YNG/N
8-10
YNG/FY
4-6
YNG/N
O/W
2-4
YNG
4-6
YNG
ICE LIMIT
BELTS/STRIPS
8-10
4-6YNG
BELTS/STRIPS
8-10
ICE FREE
ICE FREE

2


ICE CONCENTRATION
6 6 Area 6 6 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
Theoretical thickness of ice on ice growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 22 APRIL 1980
ICE FREE
ICE LIMIT
10 FY
10 OLD
9-10 FY/YNG
9-10 YNG/FY
9-10 N/YNG
3-6 YNG BELTS/STRIPS 8-10
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
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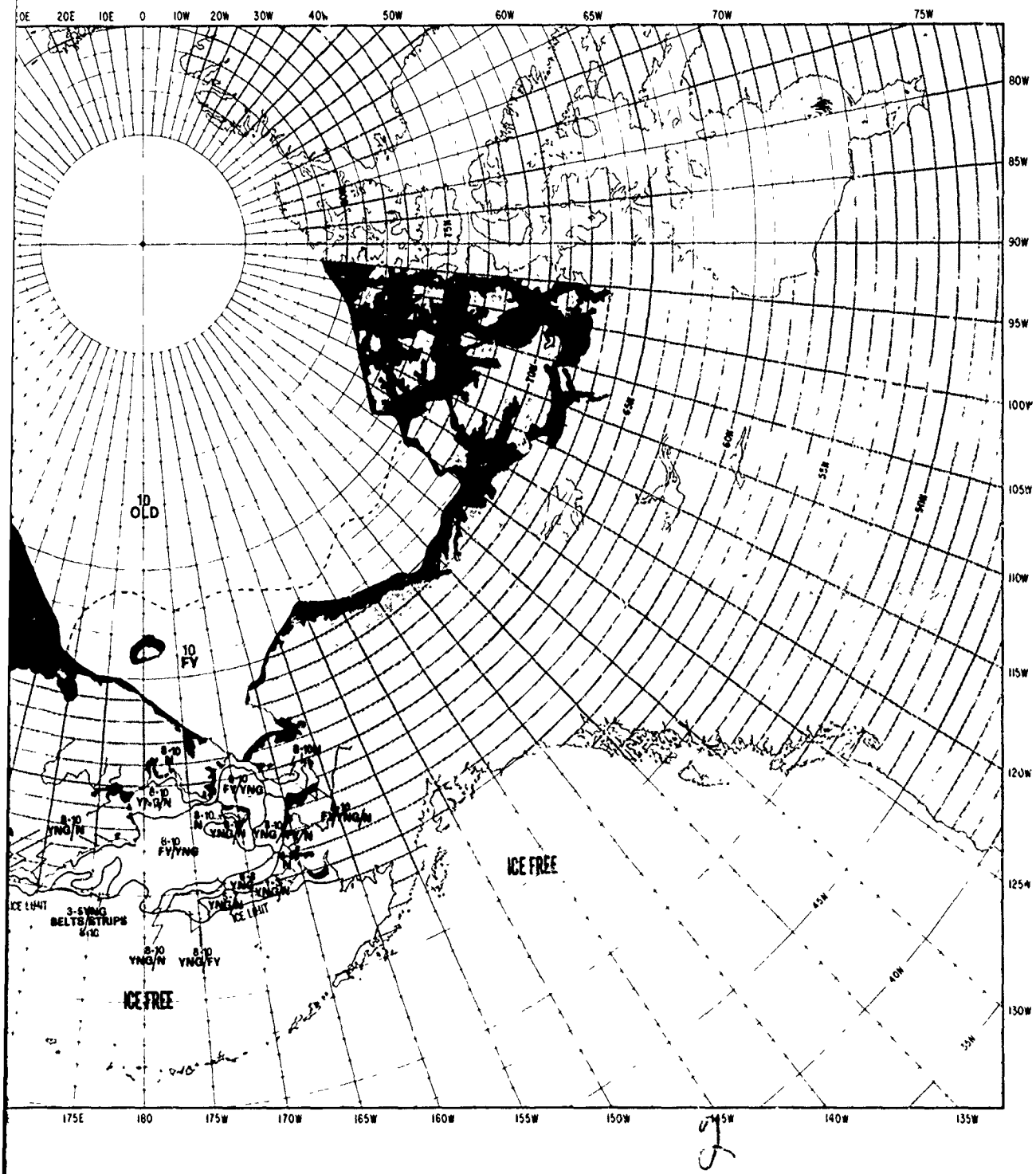
180
175W
170W
165W
160W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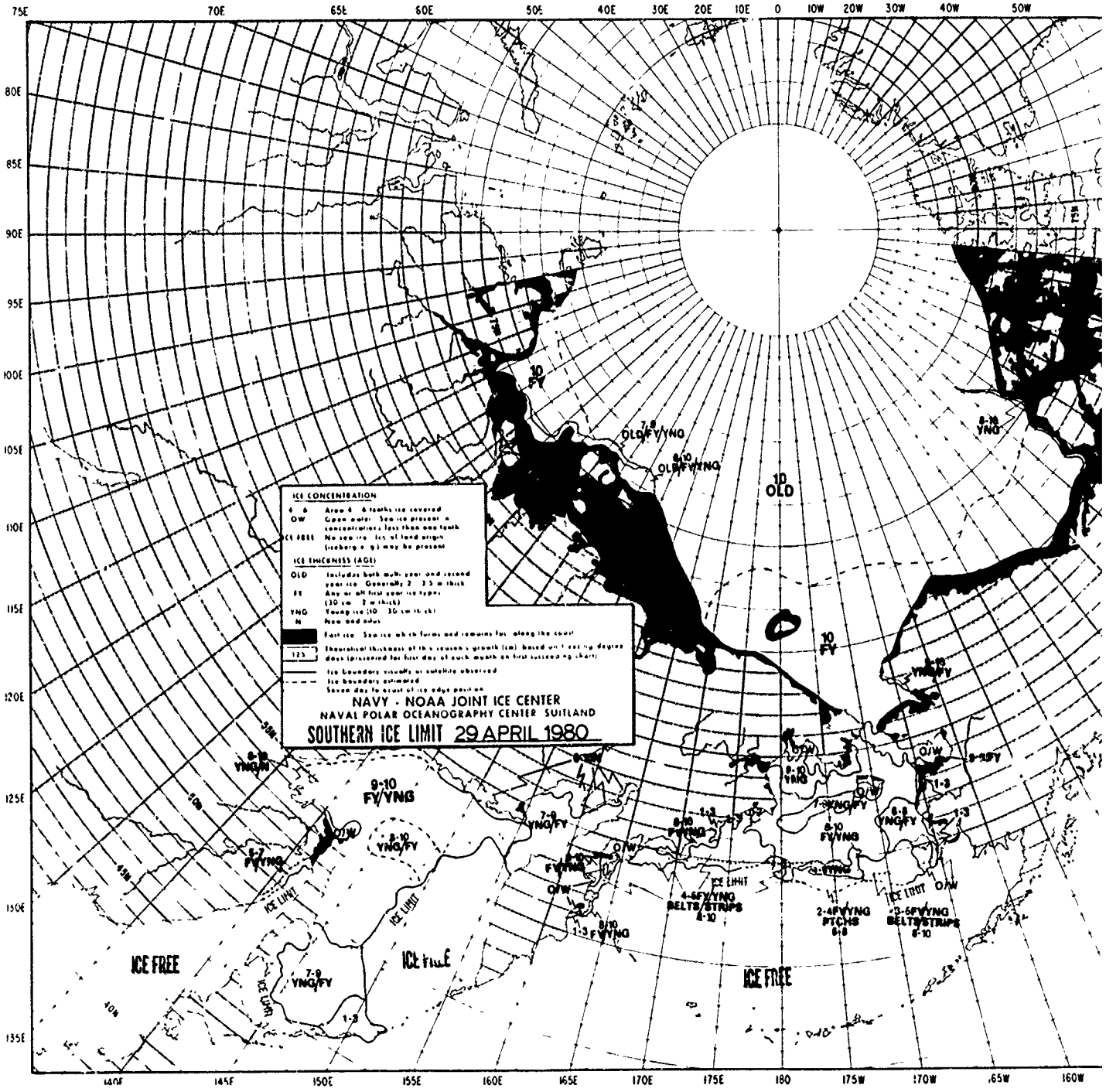
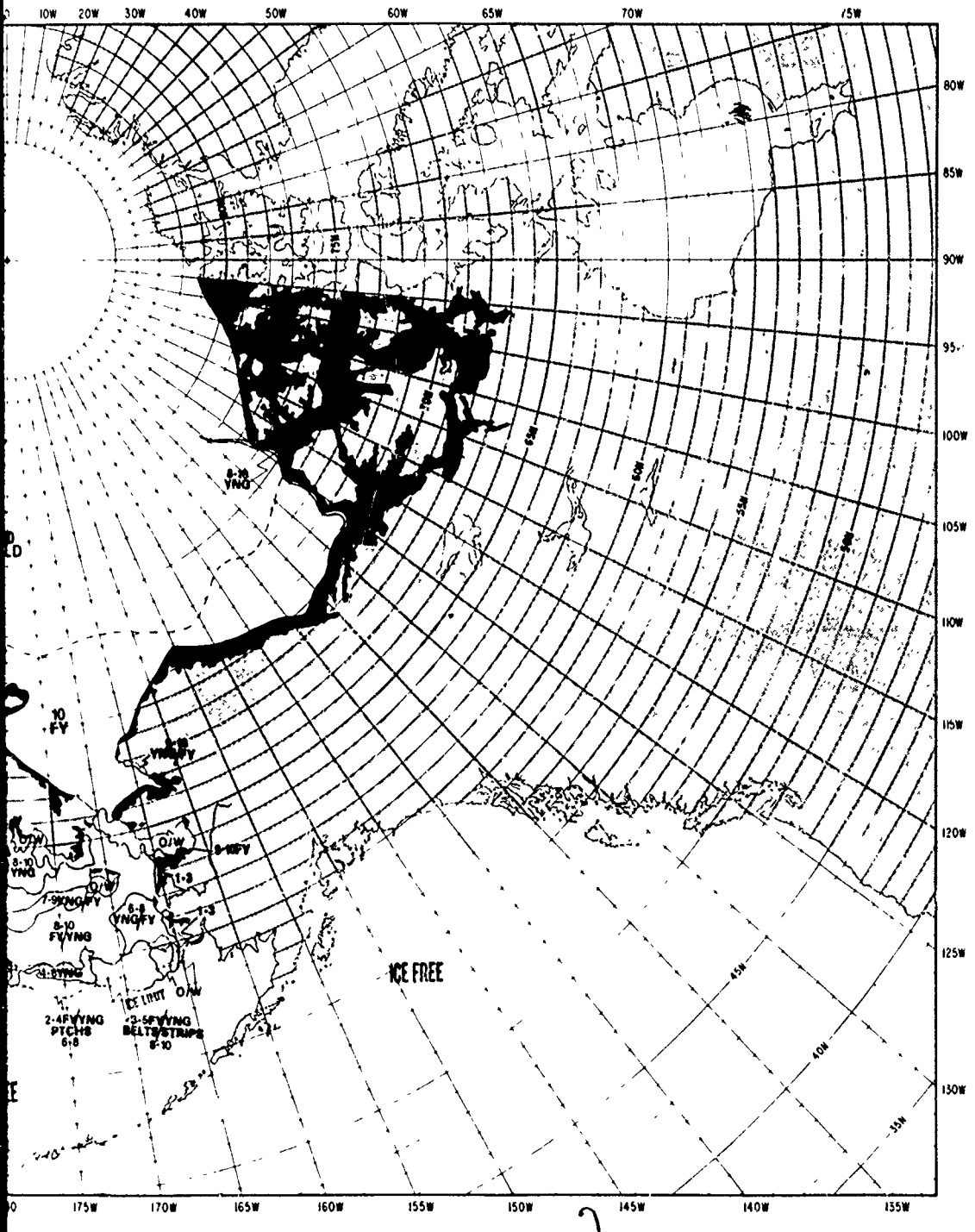
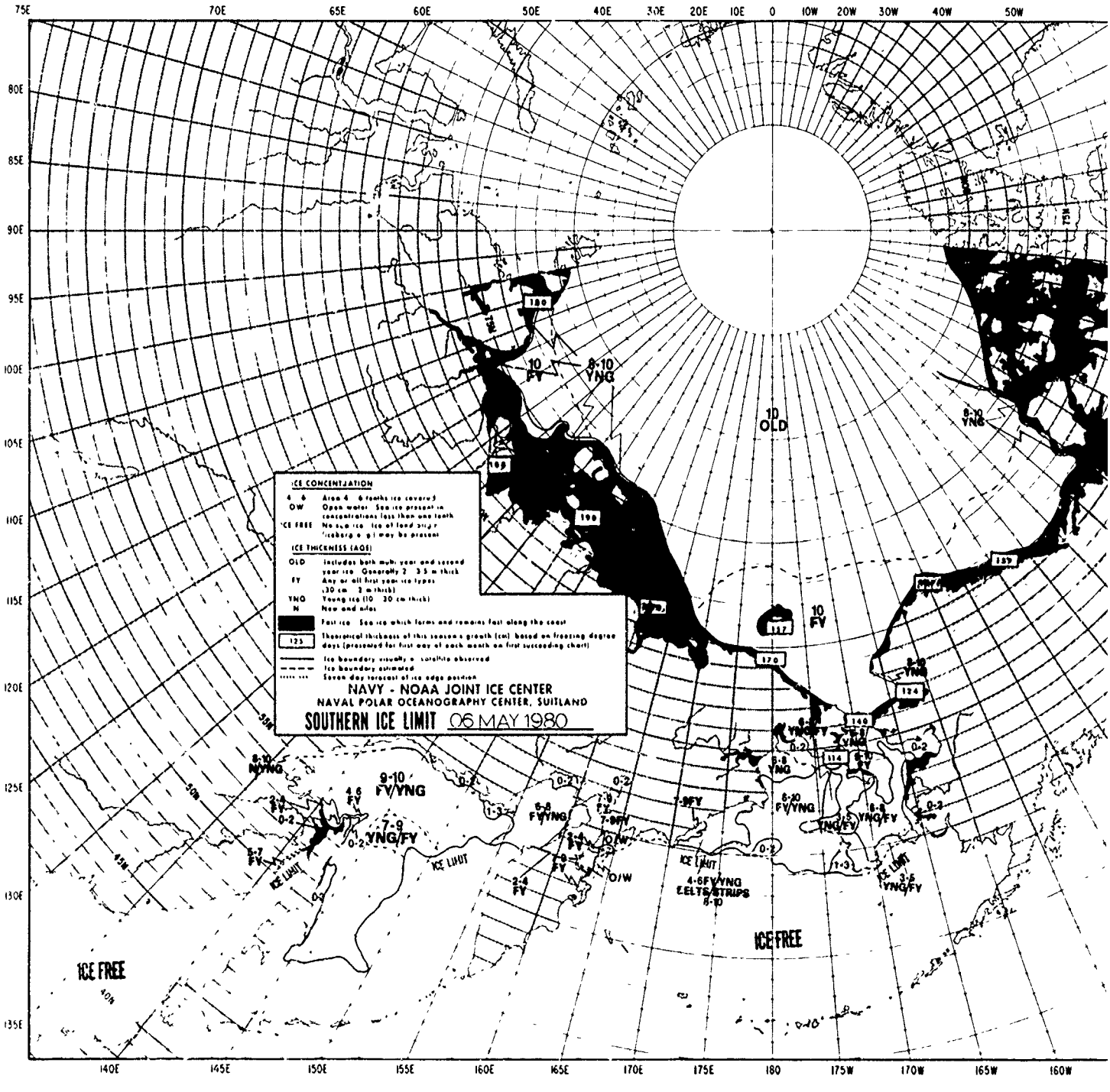
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
10
OLD
10
FV
8-10
YNG/N
8-10
FY/YNG
8-10
FY/YNG/N
8-10
FY/YNG
ICE FREE
ICE LIMIT
3-5 YNG
BELTS/STRIPS
8-10
8-10
YNG/N
8-10
YNG/FY
ICE FREE
175E 180 175W 170W 165W 160W 155W 150W 145W 140W 135W



ICE CONCENTRATION
4 - 6 Area 4 - 6 tenths ice covered
OW Open water. Sea ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (iceberg e.g.) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice. Generally 2 - 3.5 m thick
FY Any or all first year ice types (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day to exact of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 29 APRIL 1980
ICE FREE
ICE LIMIT
10 OLD
10 FY
9-10 FY/YNG
7-9 YNG/FY
8-10 YNG/FY
8-10 FY/YNG
4-6FY/YNG BELTS/STRIPS 8-10
2-4FY/YNG PTCHS 6-8
3-6FY/YNG BELTS/STRIPS 8-10


10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
175W
170W
165W
160W
155W
150W
145W
140W
135W
ICE FREE
8-10 YNG
10 FY
O/W
9-10FY
1-3
8-10 YNG
7-9YNG/FY
6-8 YNG/FY
8-10 FY/YNG
4-8YNG
ICE LIMIT
O/W
2-4FY/YNG PTCHS 6-8
3-5FY/YNG BELTS/STRIPS 8-10
45N
40N
35N

2


ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
Theoretical thickness of this season's growth (cm) based on freezing degree days (processed for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 06 MAY 1980
ICE FREE
ICE FREE
ICE LIMIT
10 FY
8-10 YNG
10 OLD
9-10 FY/YNG
7-9 YNG/FY
4-6 FY/YNG FLTS/STRIPS 8-10
O/W
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
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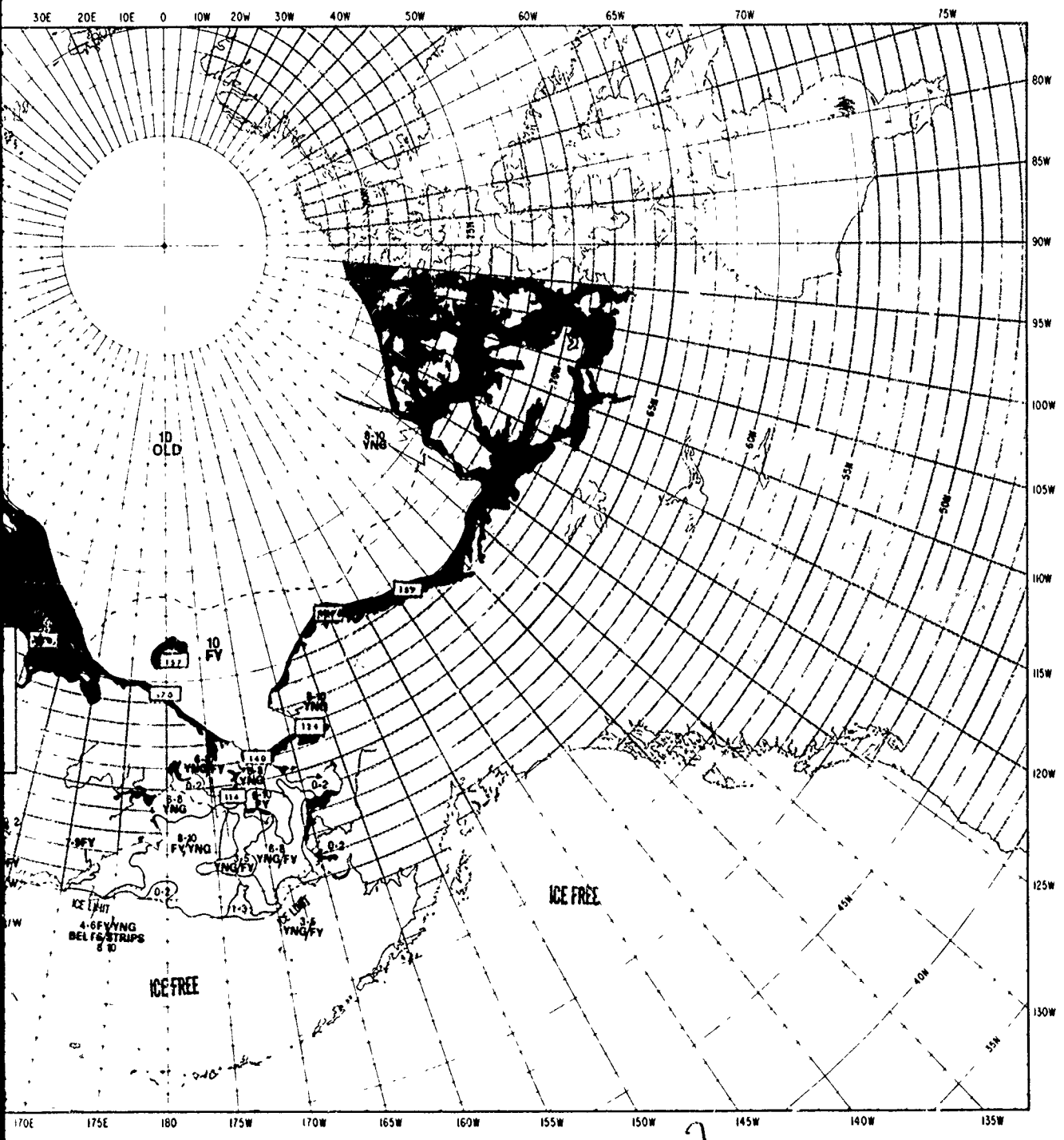
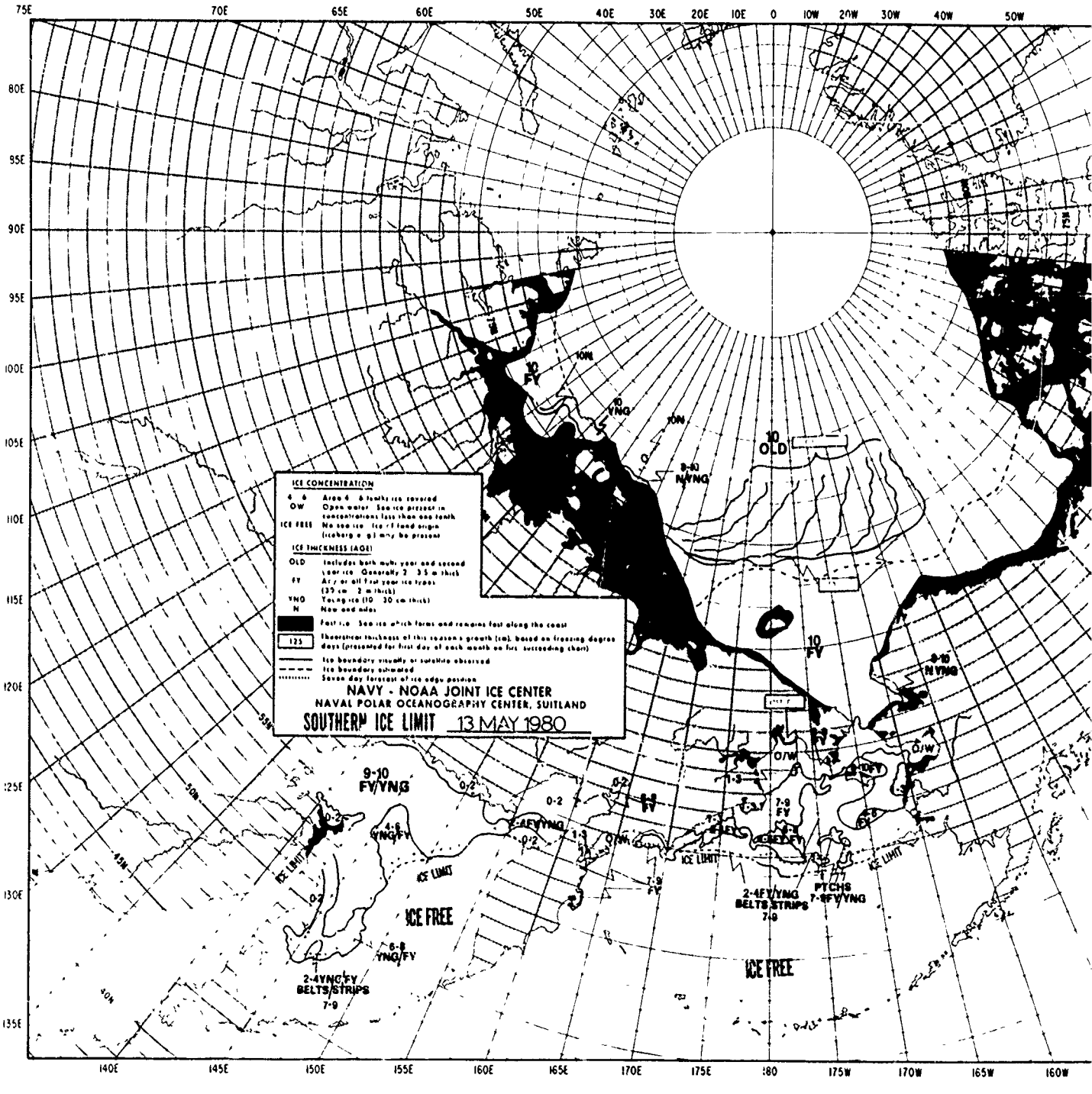
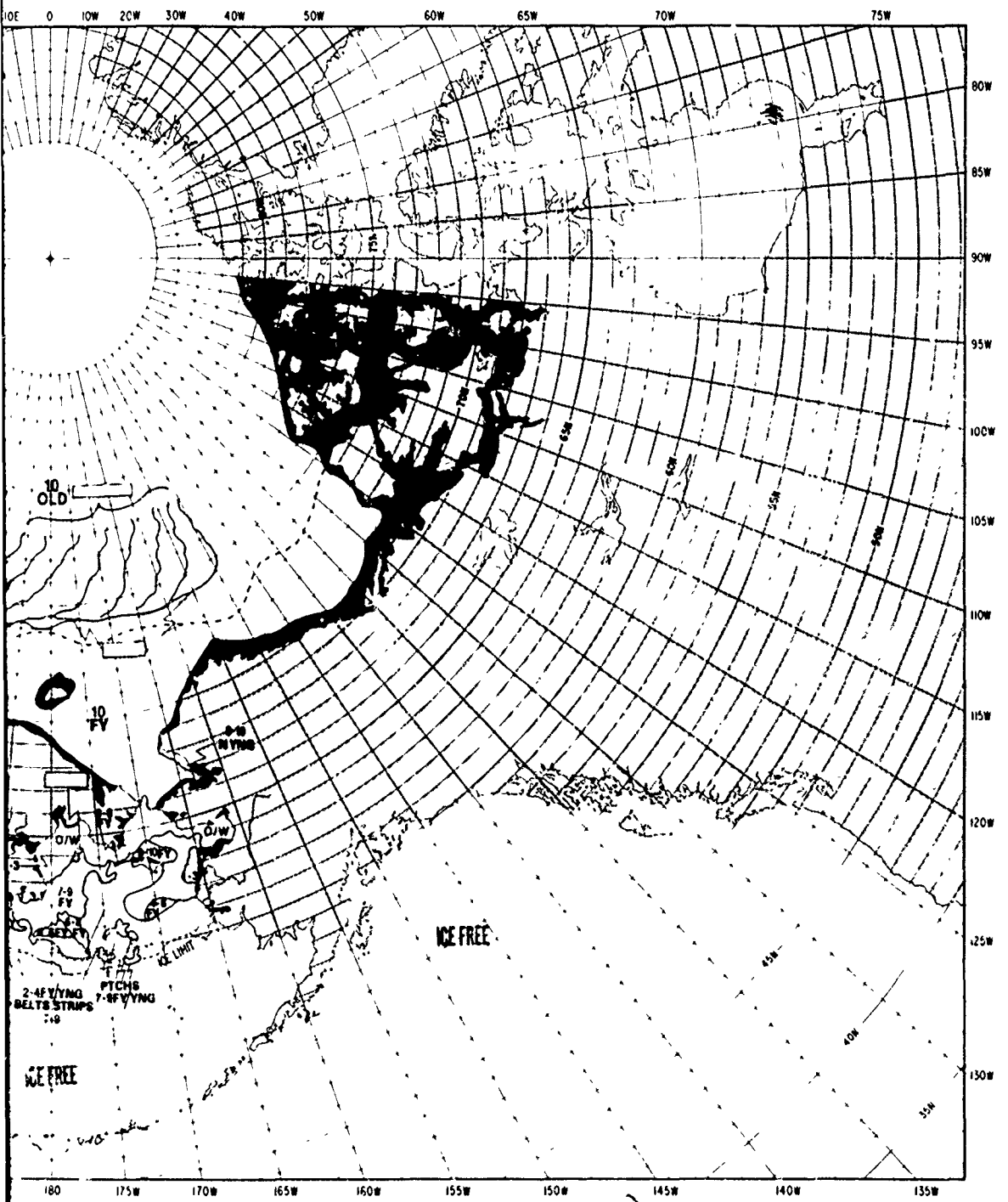
175E
180
175W
170W
165W
160W


30E
20E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
180
175E
170E
1D
OLD
8-10
YNG
10
FV
ICE FREE
ICE FREE
ICE LIMIT
4-6 FY/YNG
BELTS/STRIPS
8-10
3-5
YNG/FY

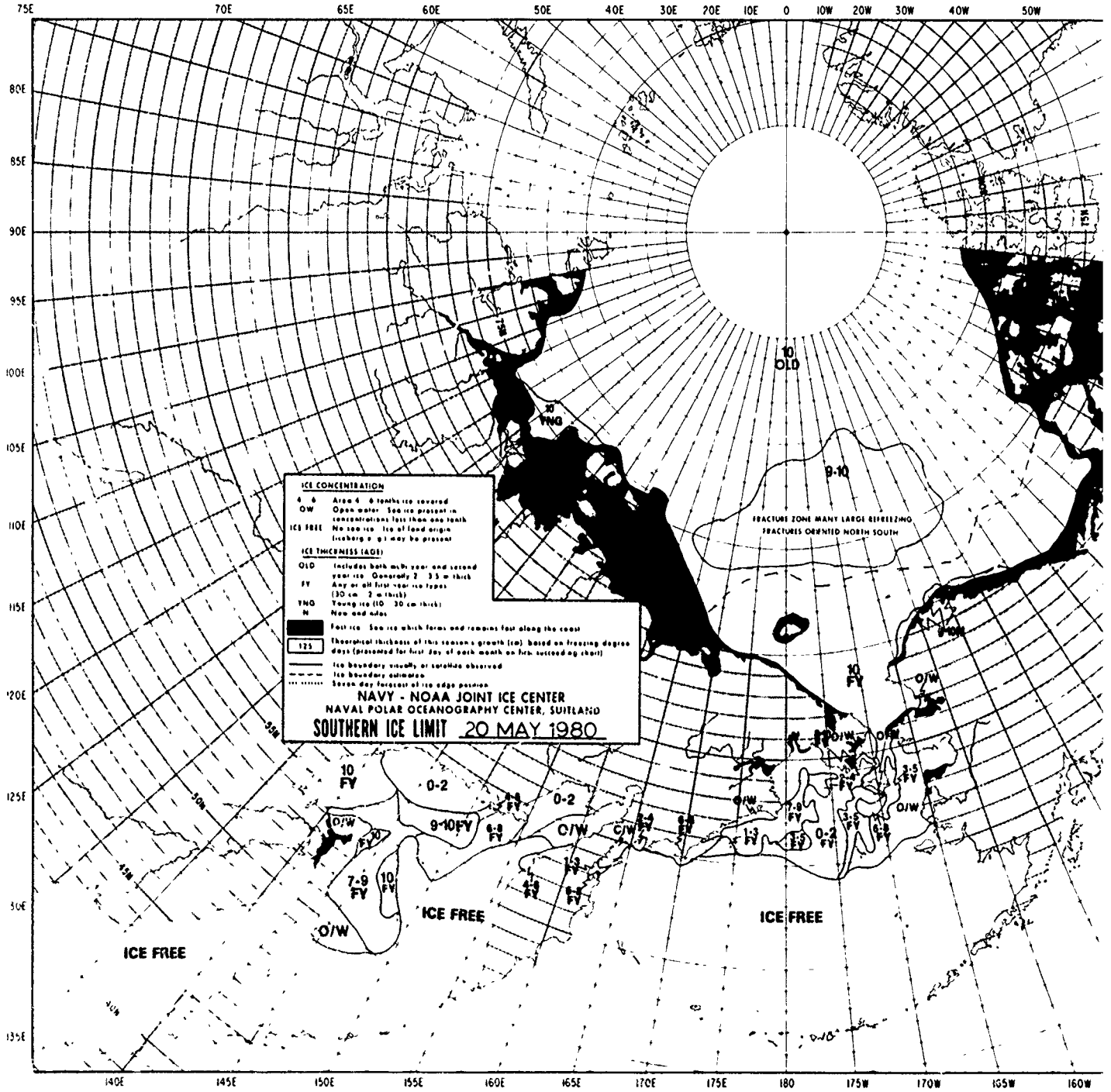
2

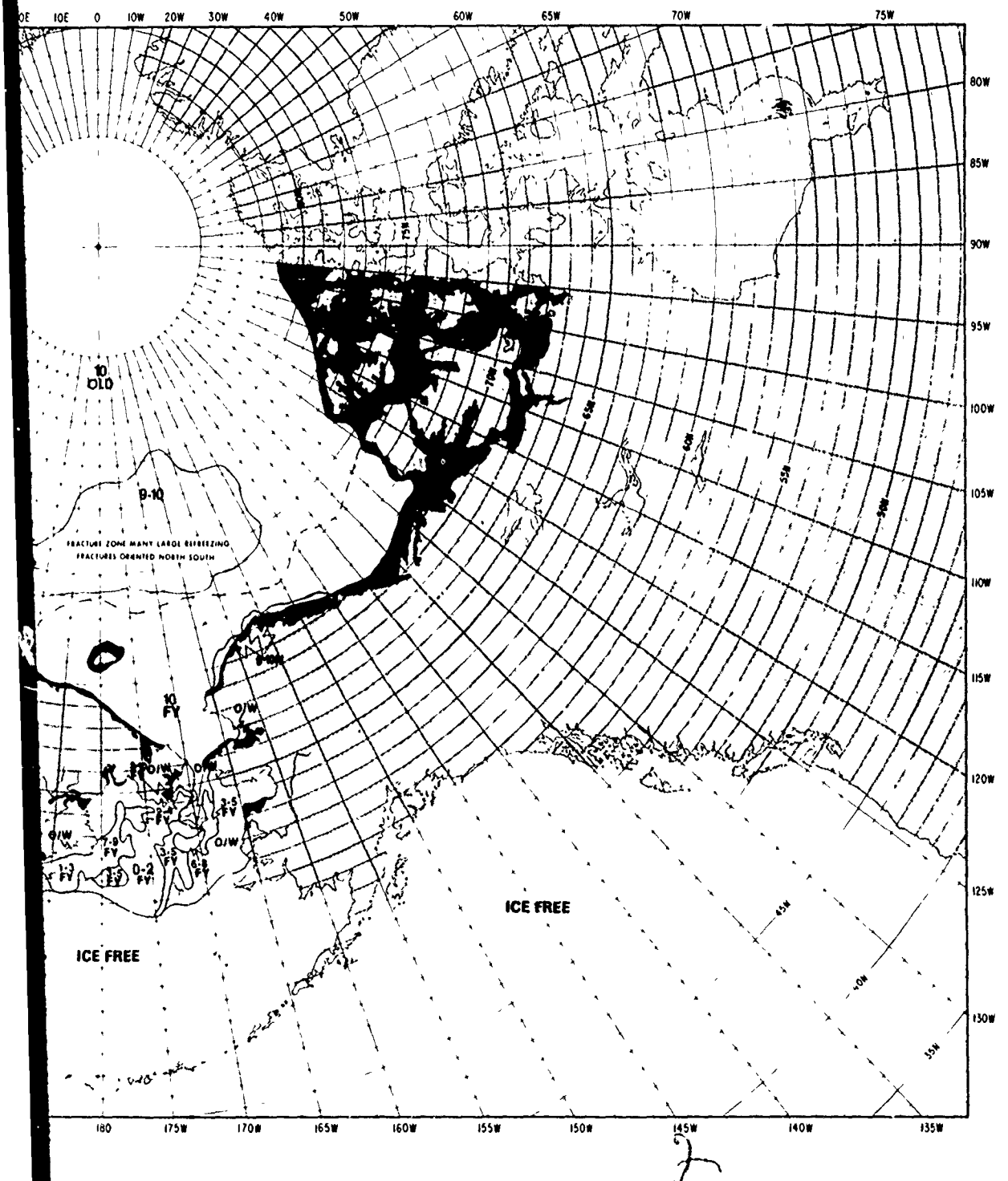

ICE CONCENTRATION
OW Open water
ICE FREE
ICE THICKNESS (AGE)
OLD
FY
YNG
N
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 13 MAY 1980
ICE FREE
ICE FREE
ICE LIMIT
9-10 FY/YNG
2-4YNG/FY BELTS/STRIPS 7-9
2-4FY/YNG BELTS/STRIPS 7-9
PTCHS 7-9FY/YNG
10 OLD
10 FY
10 YNG
8-10 N/YNG
O/W

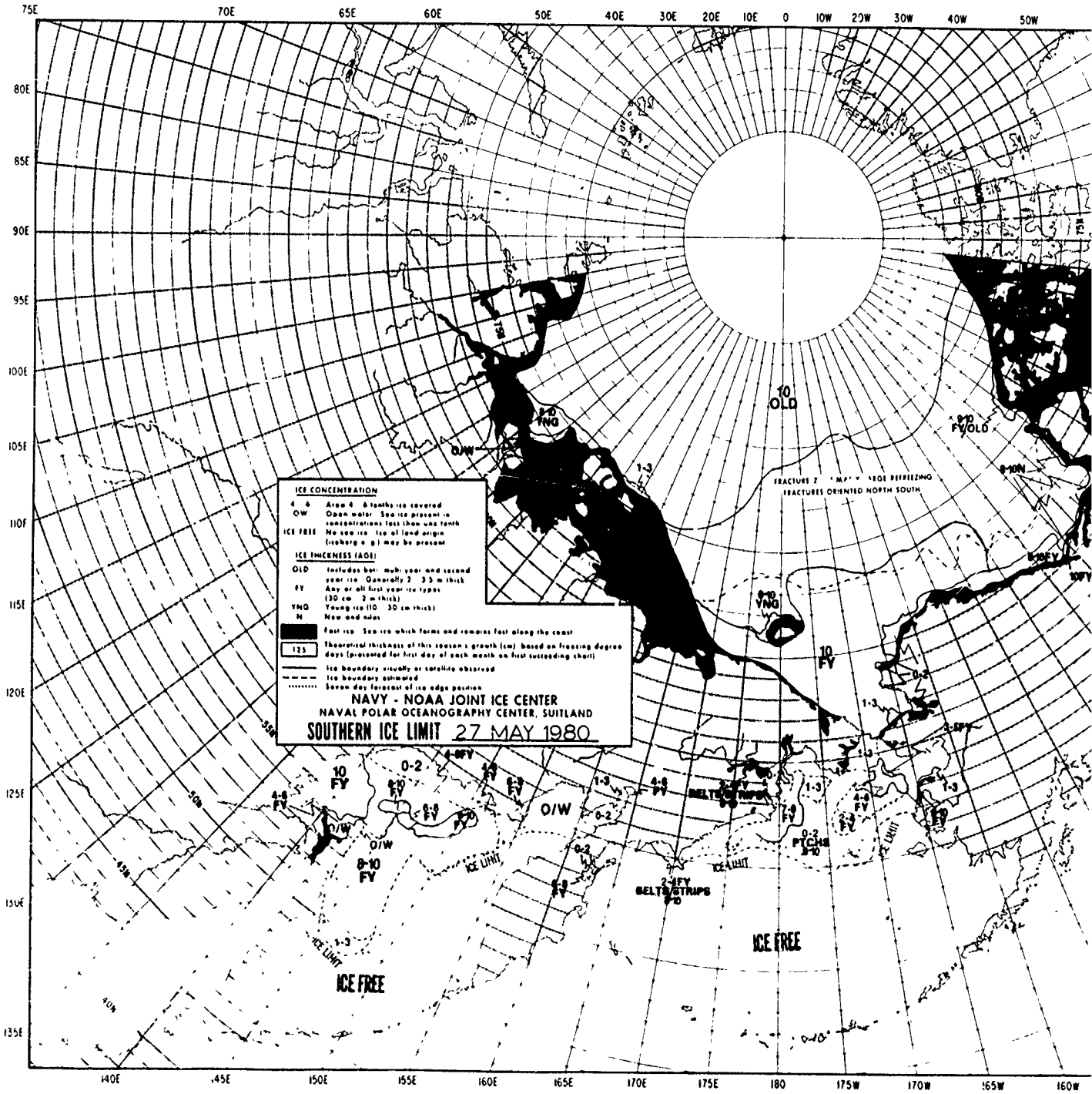


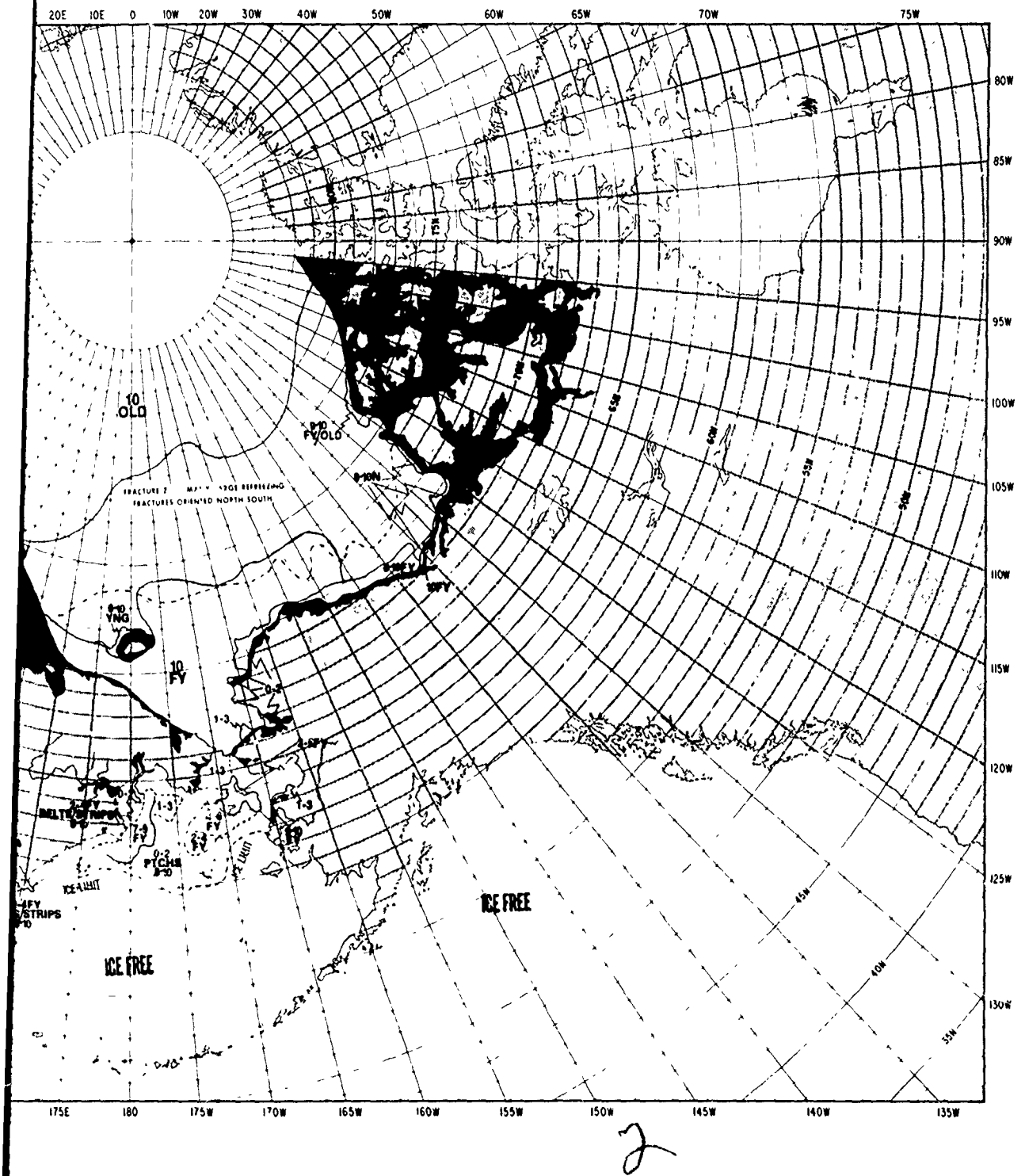
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10 OLD
10 FY
O/W
ICE FREE
ICE LIMIT
PTCHS
2-4FY/YNG
BELTS STRIPS
7-9FY/YNG

2

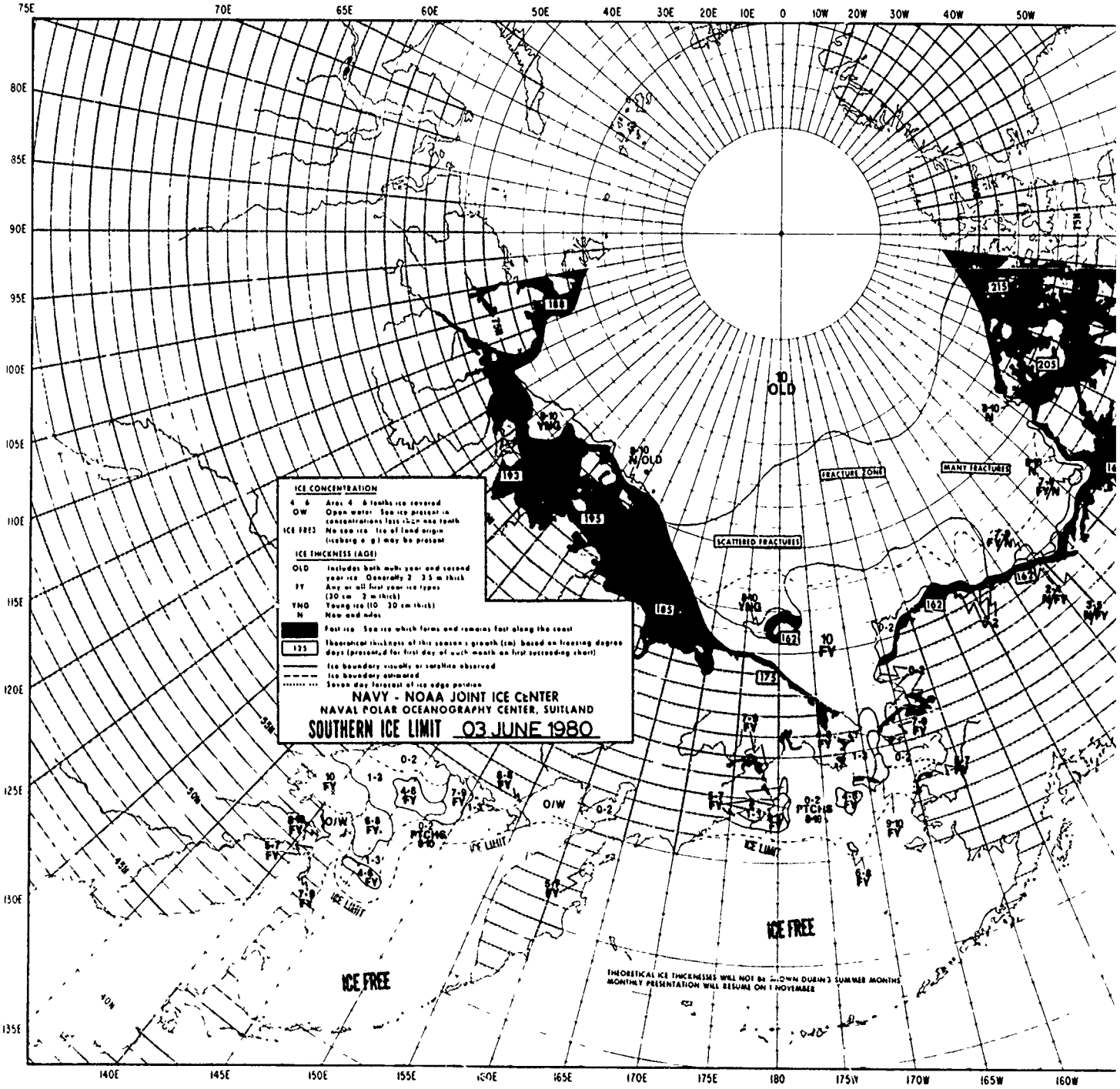

ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and ndas
Fast ice See ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (processed for first day of each month on firm succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 20 MAY 1980
FRACTURE ZONE MANY LARGE REFREEZING FRACTURES ORIENTED NORTH SOUTH
ICE FREE
ICE FREE
ICE FREE
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W

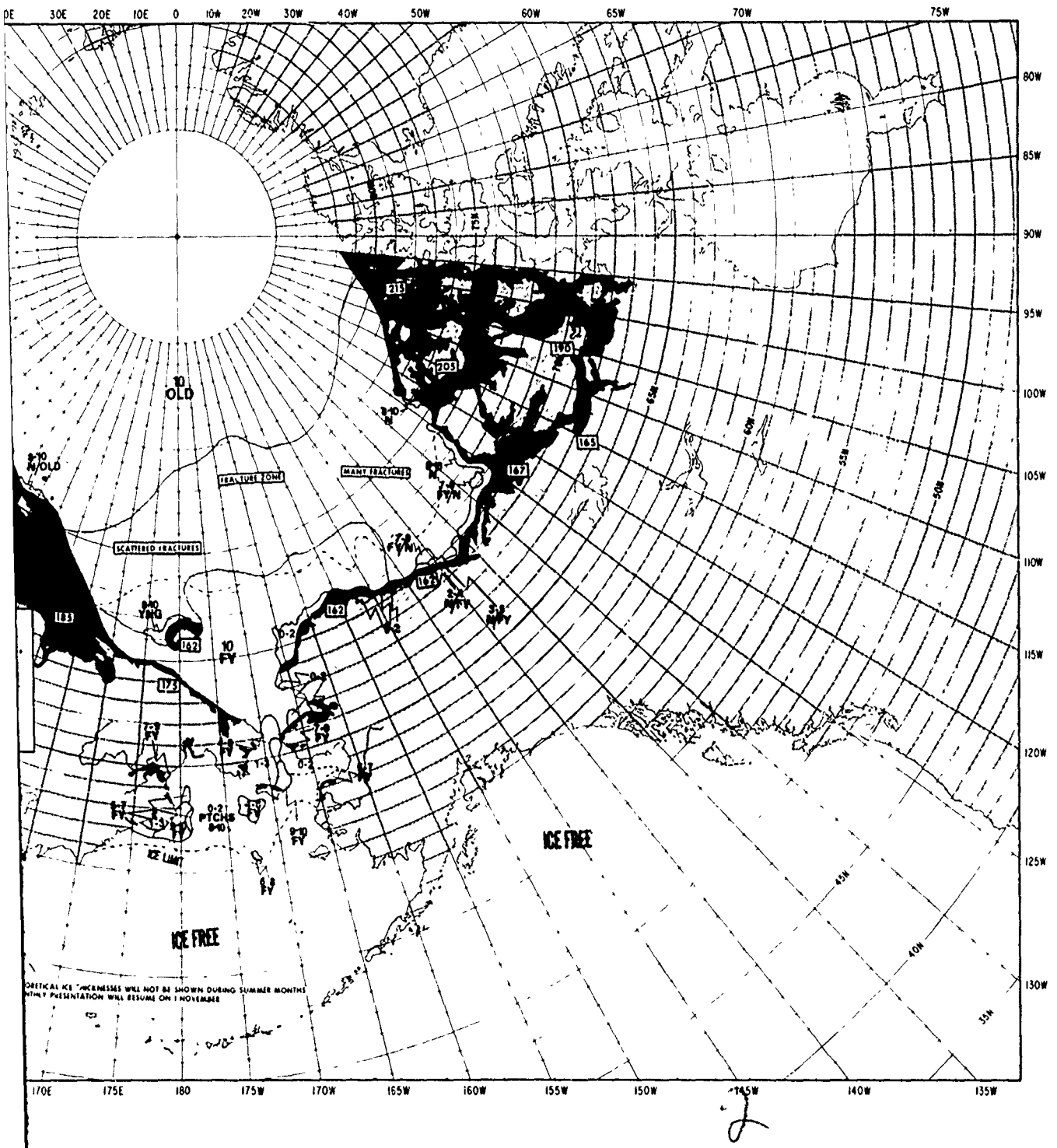

0E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
180
175W
170W
165W
160W
155W
150W
145W
140W
10
OLD
9-10
FRACTURE ZONE MANY LARGE REFREEZING
FRACTURES ORIENTED NORTH SOUTH
10
FY
O/W
ICE FREE
ICE FREE


ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
O/W Ocean water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (processed for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 27 MAY 1980
FRACTURE Z MAY REFREEZING
FRACTURES ORIENTED NORTH SOUTH
ICE FREE
ICE FREE
ICE LIMIT
ICE LIMIT
ICE LIMIT
ICE LIMIT
O/W
O/W
O/W
O/W
10 OLD
9-10 FY/OLD
9-10 YNG
9-10N
9-10 YNG
10 FY
10 FY
8-10 FY
2-4FY BELTS/STRIPS 8-10
0-2 PTCHS 8-10
1-3
1-3
1-3
1-3
1-3
1-3
0-2
0-2
0-2
0-2
4-6 FY
4-6 FY
4-6 FY
4-6 FY
4-6 FY
4-6 FY
4-6FY
4-6FY
4-6FY
4-6FY
8-9 FY
8-9 FY
8-9

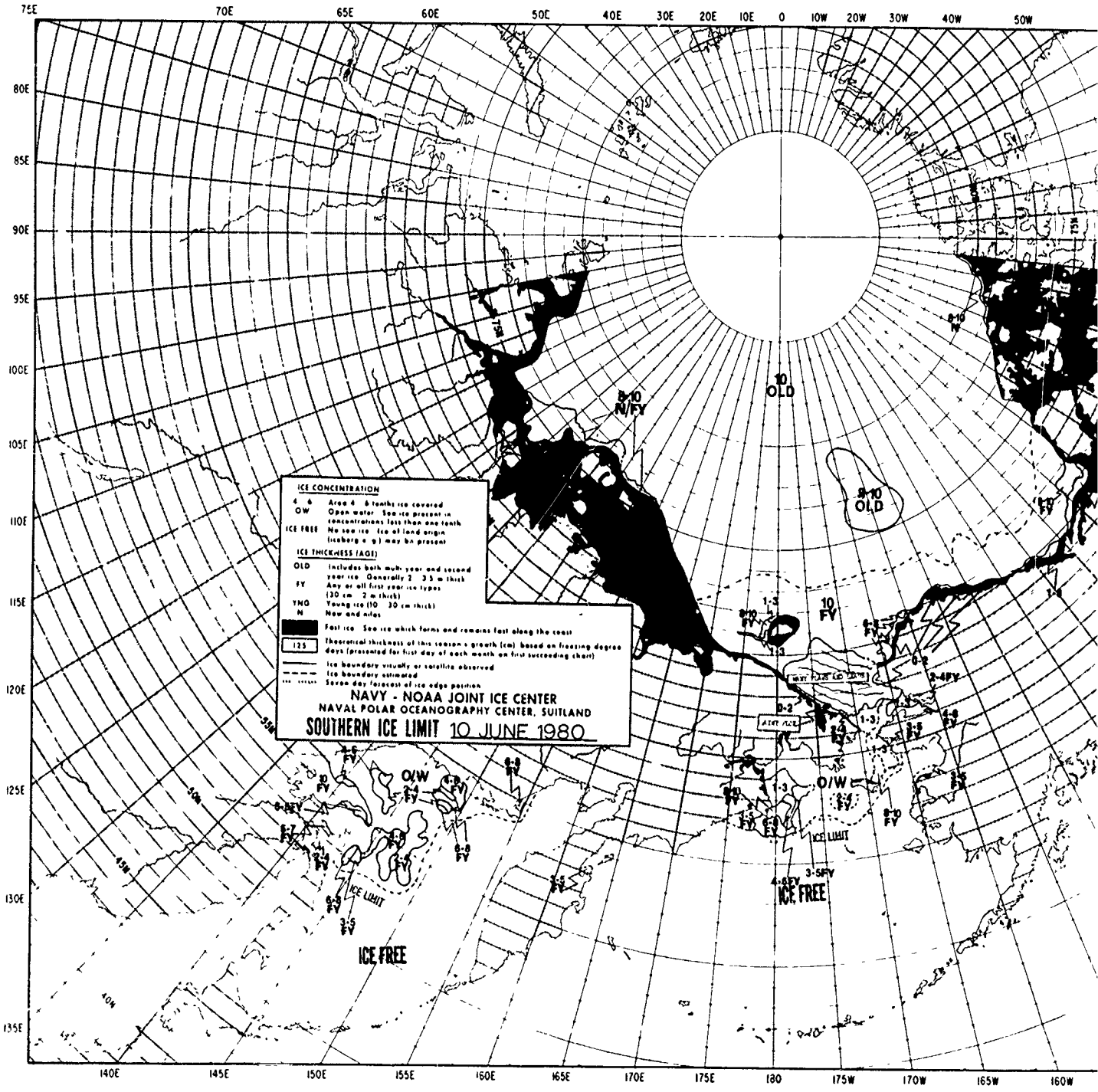

20E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
175E
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10
OLD
FY/OLD
YNG
10
FY
BELTS/STRIPS
PTCHS
ICE LIMIT
ICE FREE
ICE FREE
FRACTURES ORIENTED NORTH SOUTH

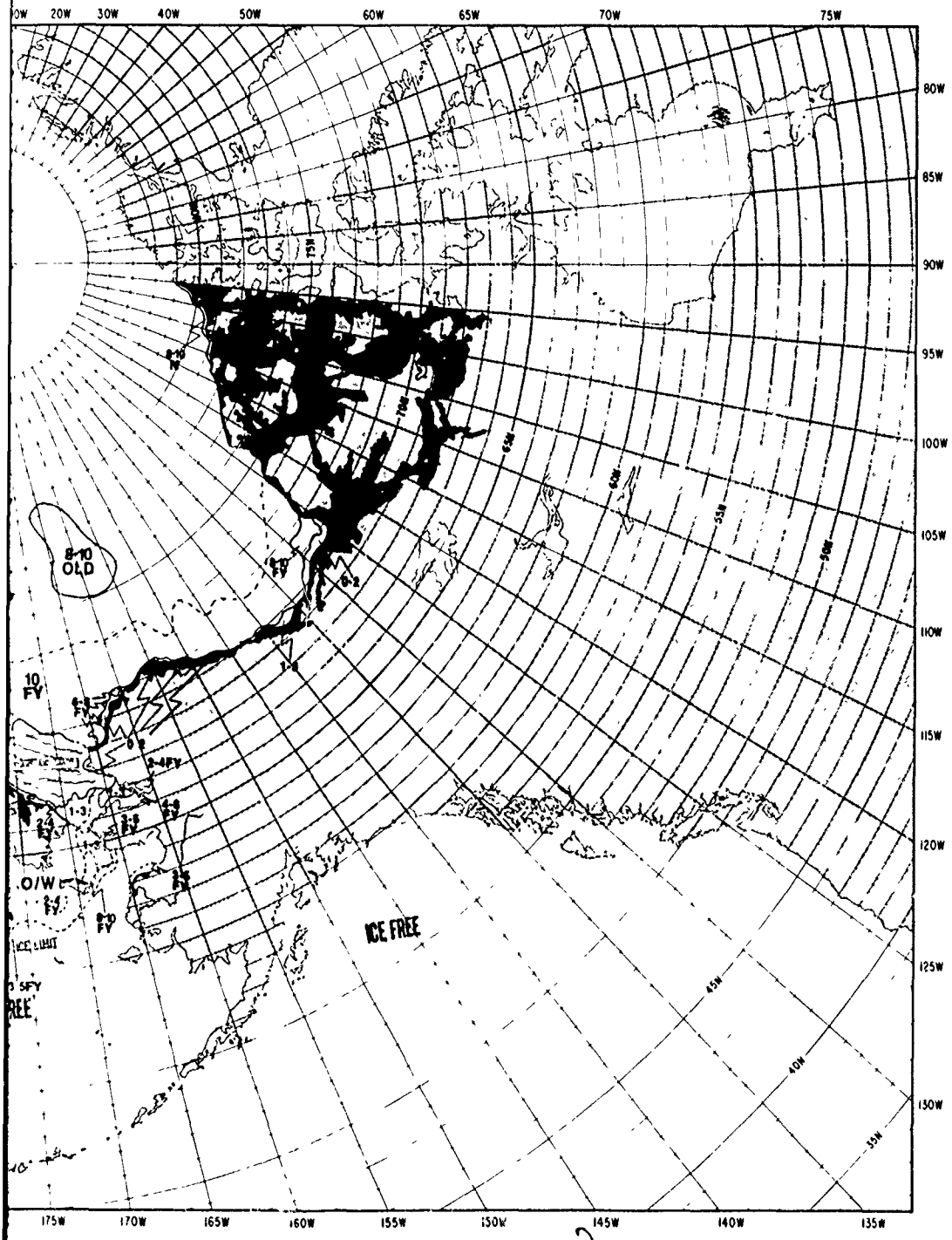
2


ICE CONCENTRATION
4 6 Area 4 - 6 tenths ice covered
OW Open water - Sea ice present in concentrations less than one tenth
ICE FREE No sea ice - Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice - Generally 2 - 3.5 m thick
FY Any or all first year ice types (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice - Sea ice which forms and remains fast along the coast
135 Theoretical thickness of this season's growth (cm) based on freezing degree days (presumed for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 03 JUNE 1980
FRACTURE ZONE
SCATTERED FRACTURES
MANY FRACTURES
ICE LIMIT
ICE FREE
ICE FREE
THEORETICAL ICE THICKNESSES WILL NOT BE SHOWN DURING SUMMER MONTHS
MONTHLY PRESENTATION WILL RESUME ON 1 NOVEMBER
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W



ICE FREE
ICE FREE
FRACTURE ZONE
MANY FRACTURES
SCATTERED FRACTURES
10 OLD
10 FY
ICE LIMIT
PTCHS


ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (icebergs e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice See ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 10 JUNE 1980
ICE FREE
ICE LIMIT
O/W
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W


20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
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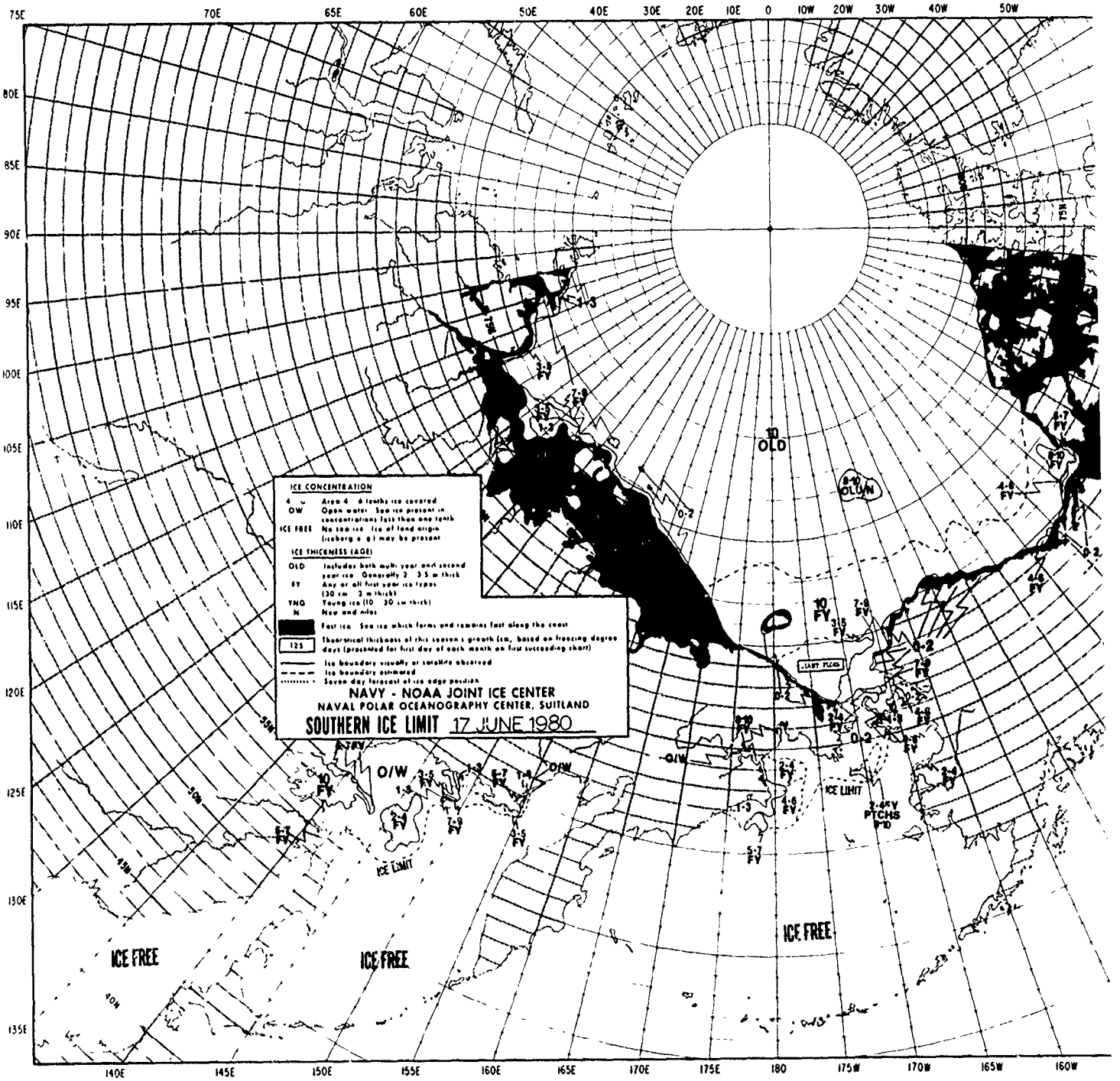
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
8-10
OLD
10
FV
O/W
ICE FREE

2


ICE CONCENTRATION
OW Open water
ICE FREE
ICE THICKNESS (AGE)
OLD
FY
YNG
NEW
Fast ice
125
Ice boundary visually or satellite observed
Ice boundary estimated
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 17 JUNE 1980
ICE FREE
ICE FREE
ICE FREE
O/W
ICE LIMIT
ICE LIMIT
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
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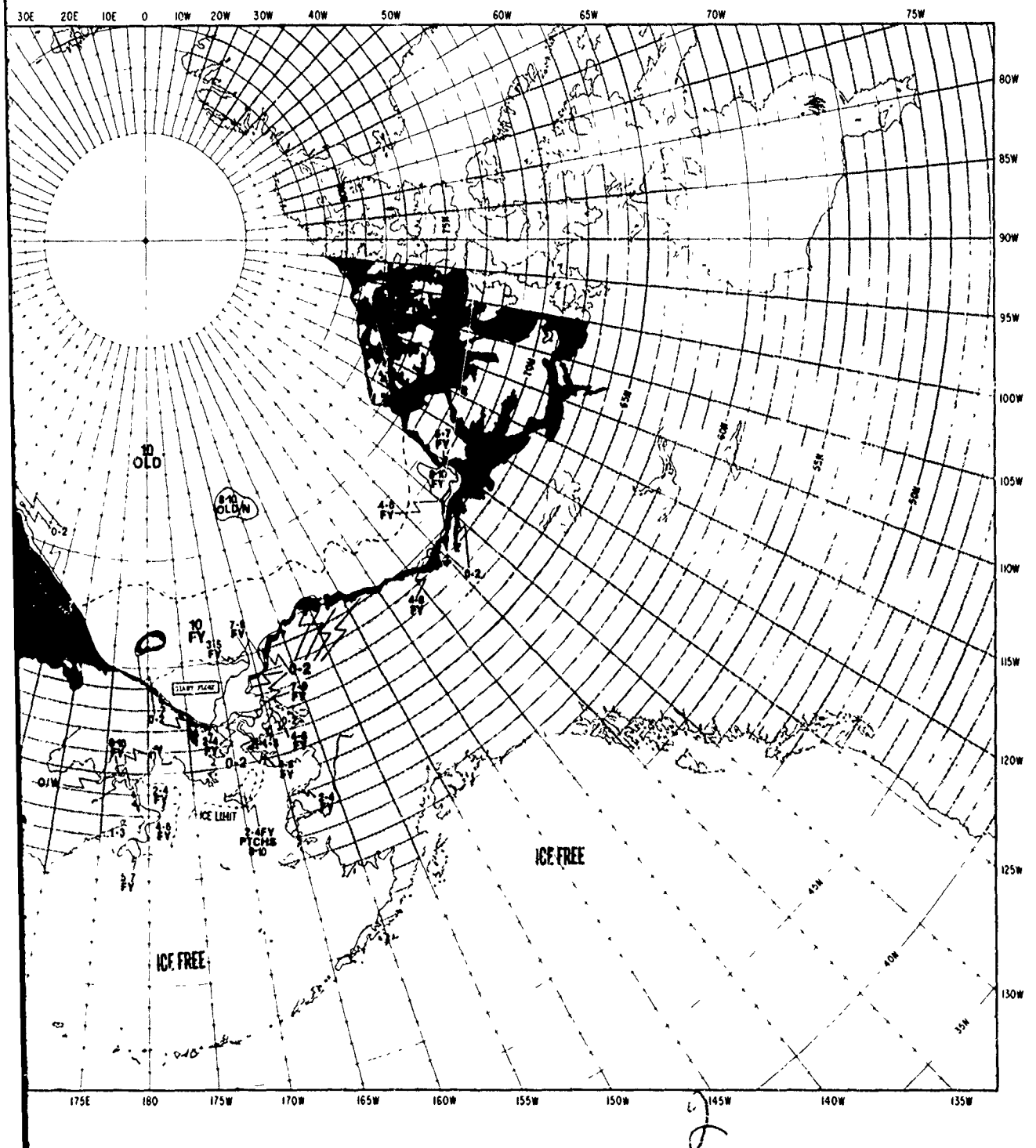
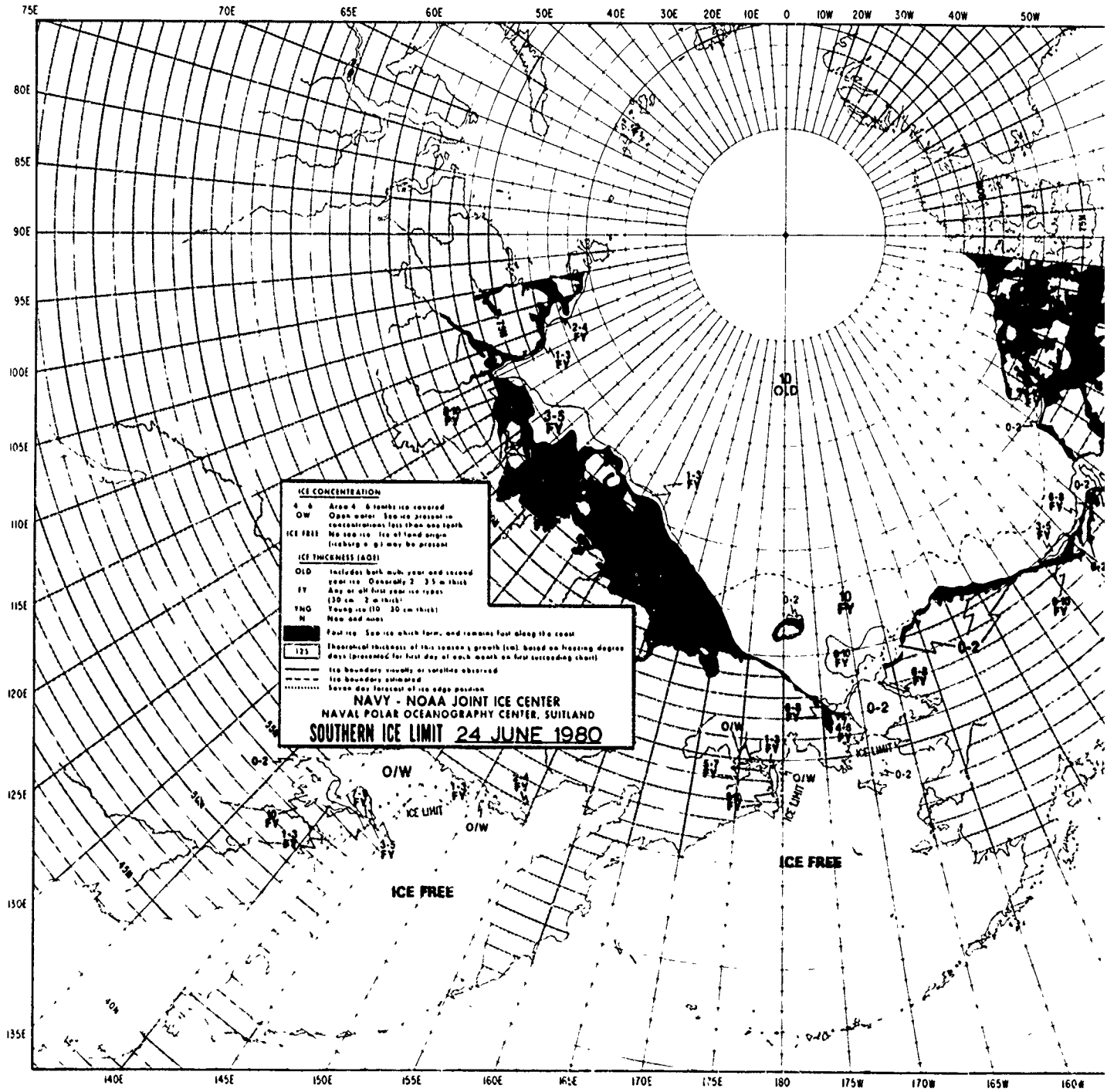
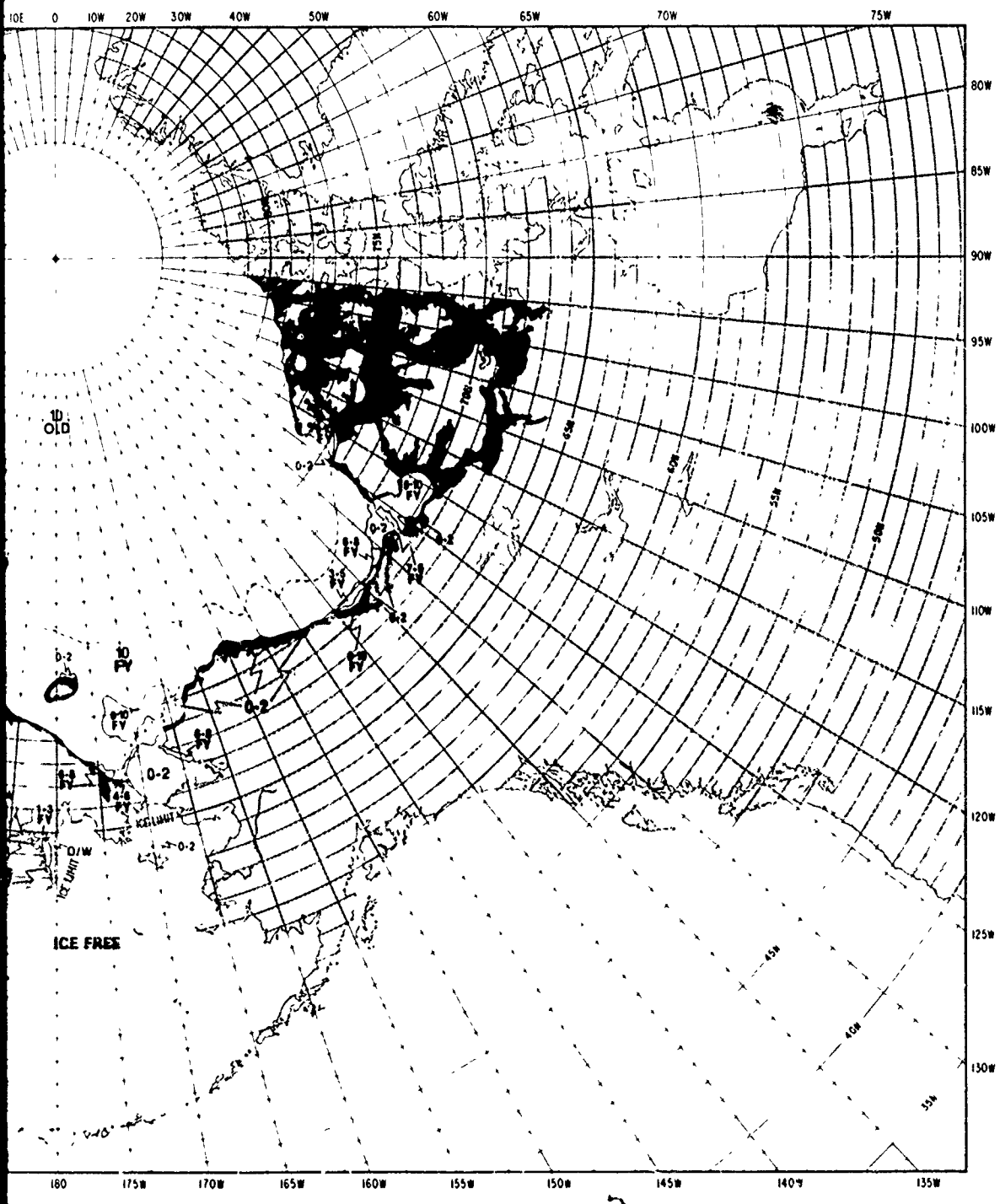
175W
170W
165W
160W

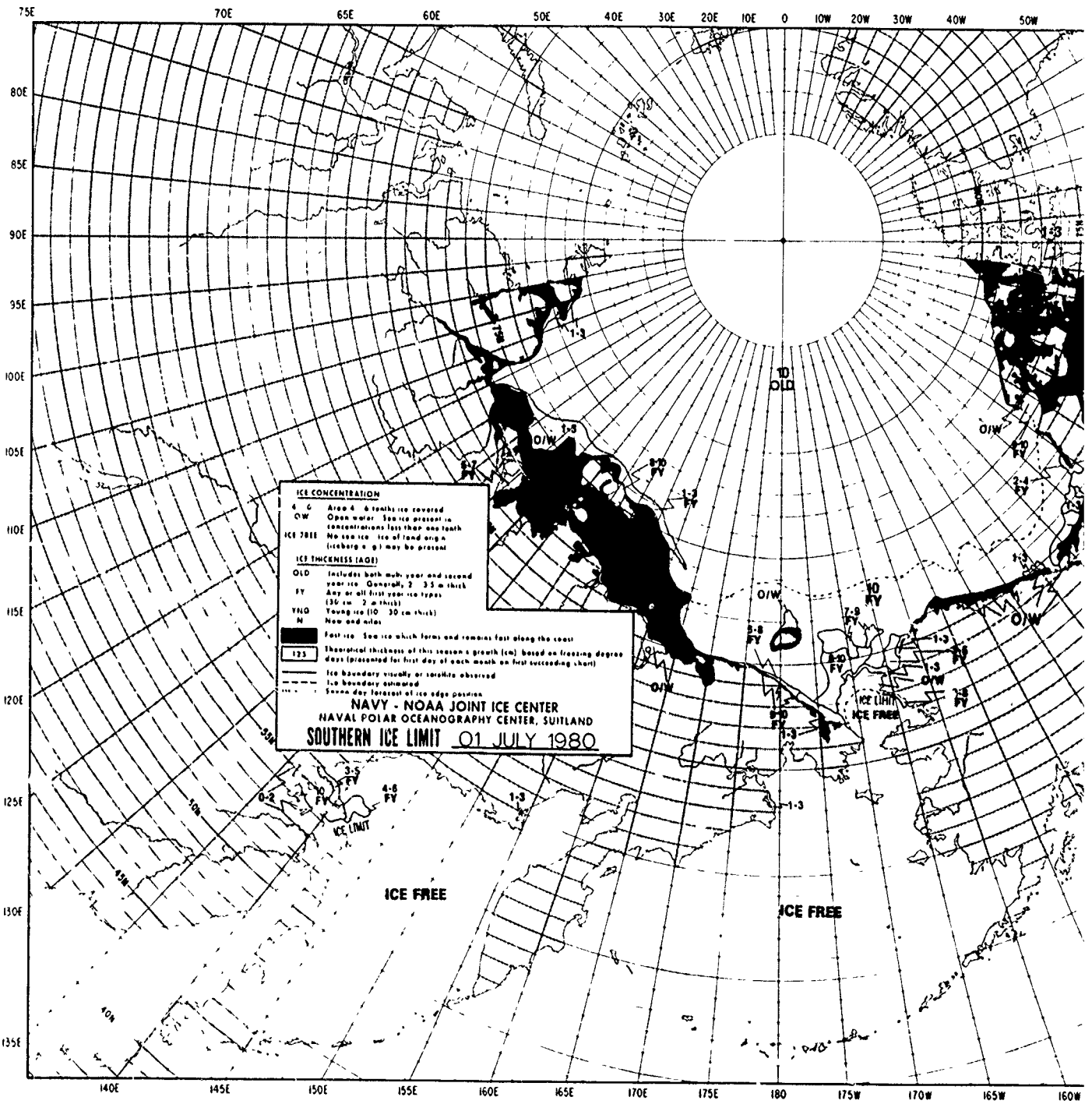

30E
20E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
175E
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10 OLD
8-10 OLD/N
10 FY
7-8 FY
3-5 FY
4-7 FY
8-10 FY
4-8 FY
0-2
2-4 FY
2-4FY PTCHS 8-10
ICE LIMIT
ICE FREE
ICE FREE

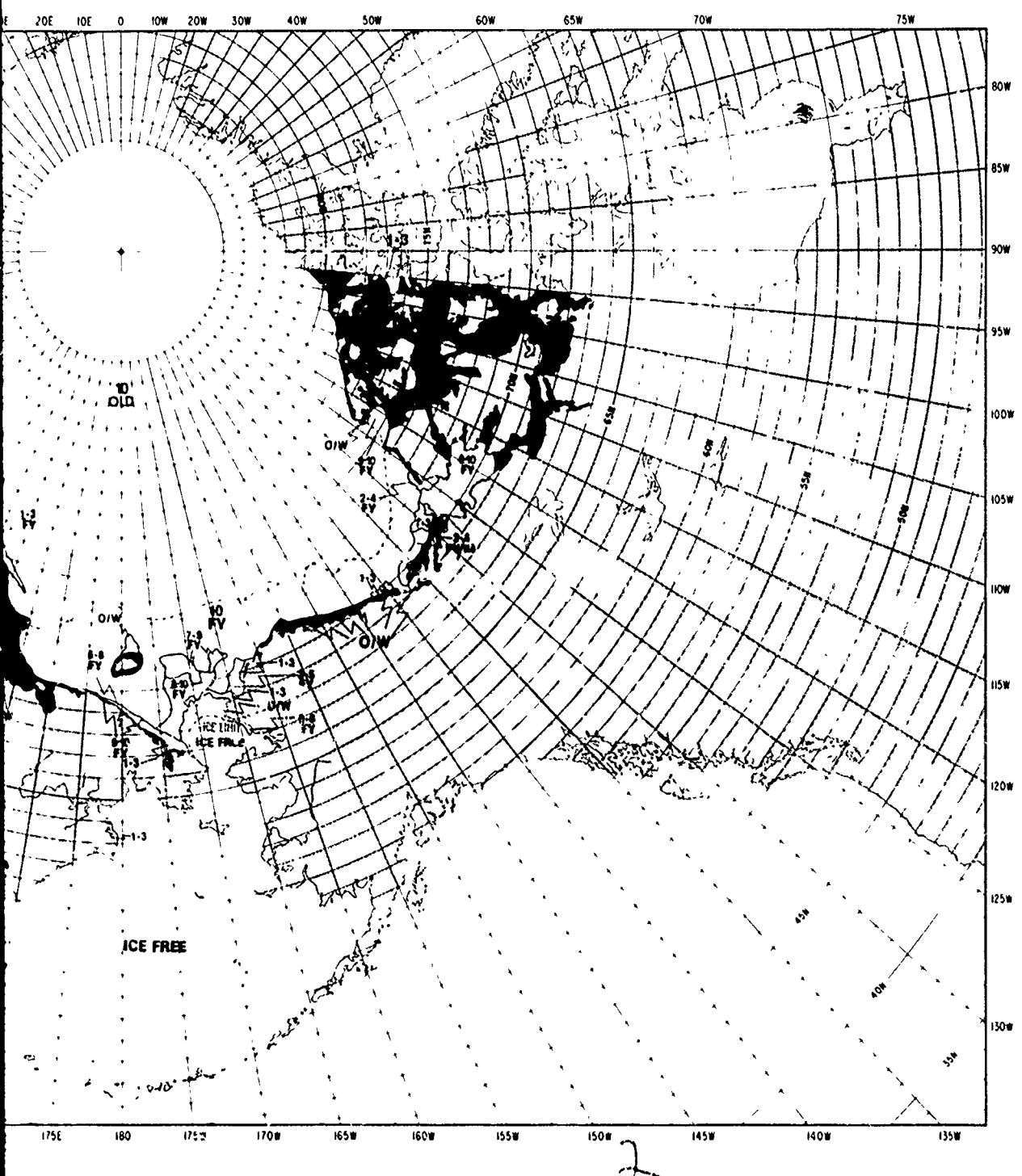


ICE CONCENTRATION
4 - 6 Area 4 - 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 - 3 5 m thick
FY Any or all first year ice types (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm), based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 24 JUNE 1980
ICE FREE
O/W
ICE LIMIT
10 OLD
10 FY
0-2

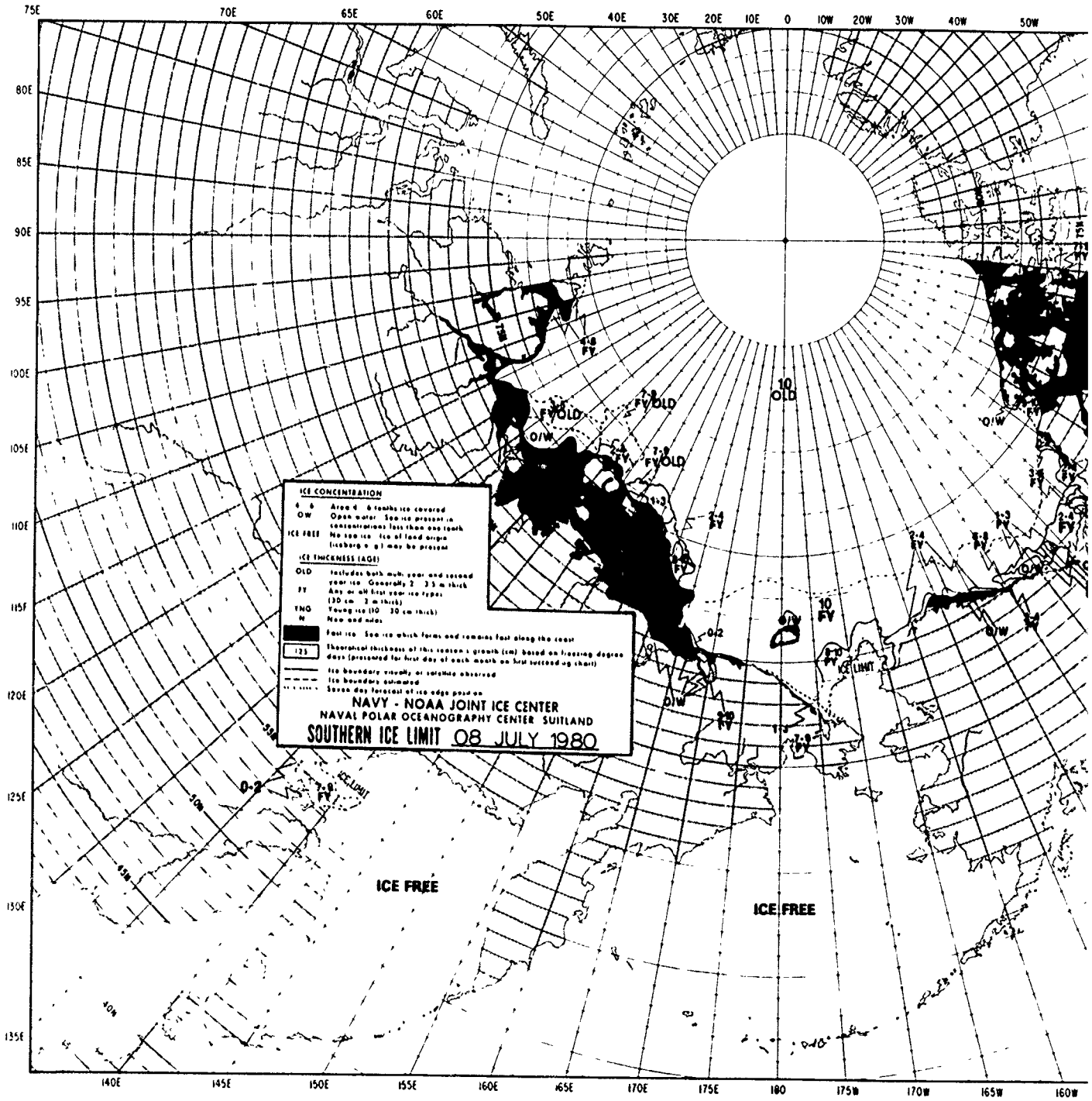

10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10 OLD
10 FY
0-2
ICE FREE
O/W
ICE LIMIT

2

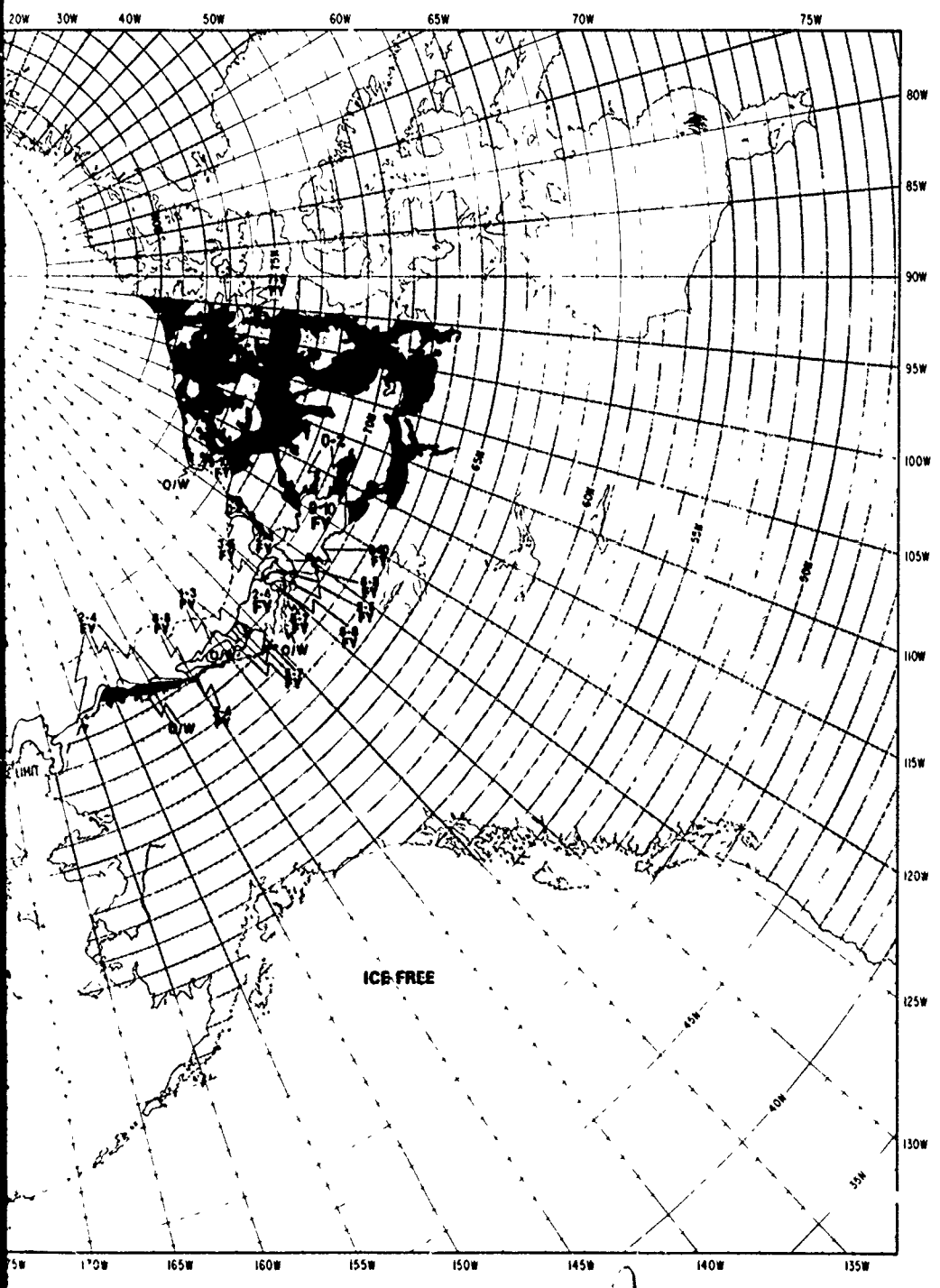

ICE CONCENTRATION
4 6 Area of 4 6 tenths ice covered
O/W Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
123 Theoretical thickness of this season s growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 01 JULY 1980
ICE FREE
ICE FREE
ICE LIMIT
ICE FREE
ICE LIMIT
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W

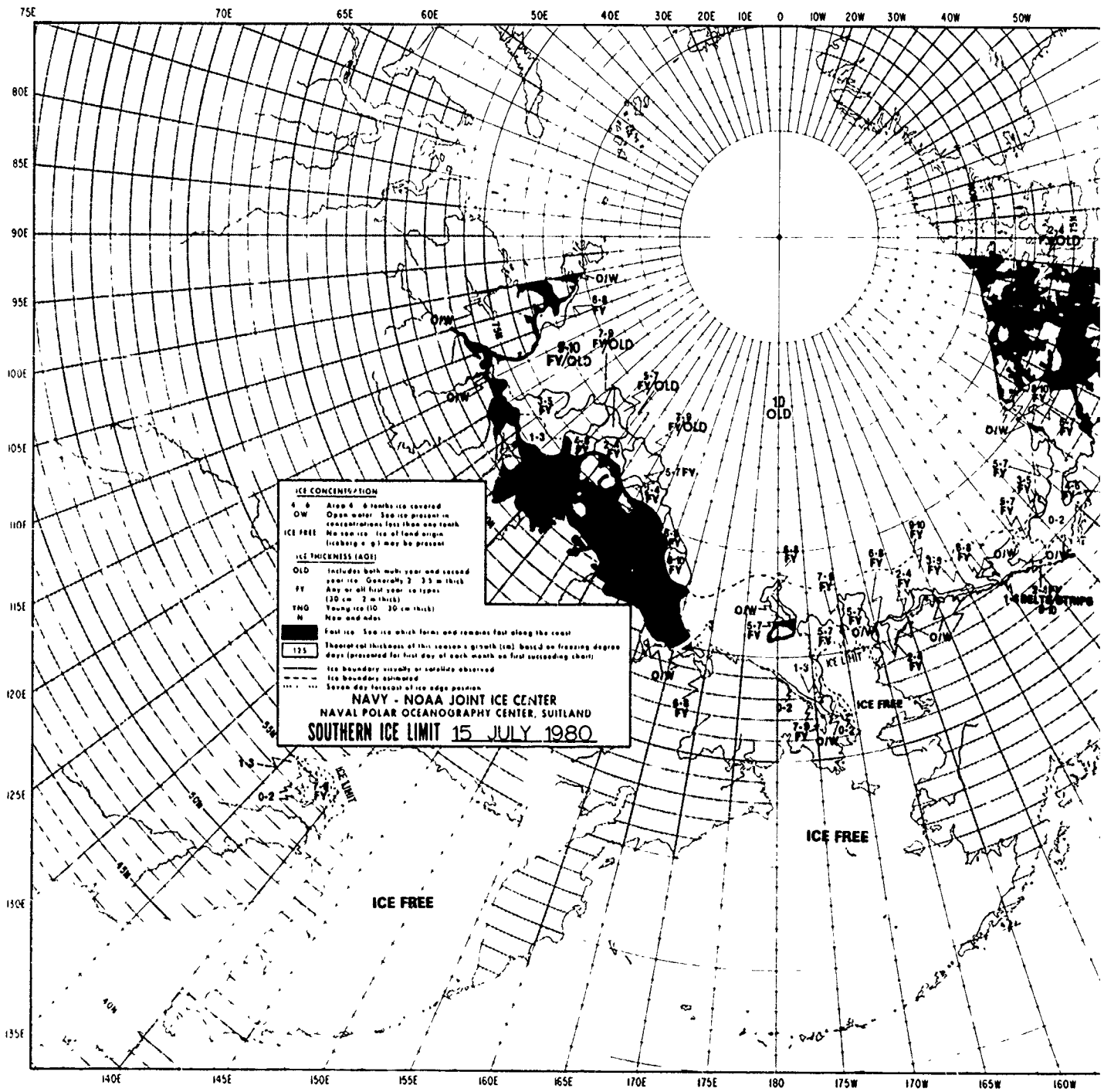

20E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
175E
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10 OLD
O/W
10 FV
ICE LIMIT
ICE FREE
1-3
2-4 FV
7-9 FV
8-10 FV
8-8 FV
65N
60N
55N
50N
45N
40N
35N

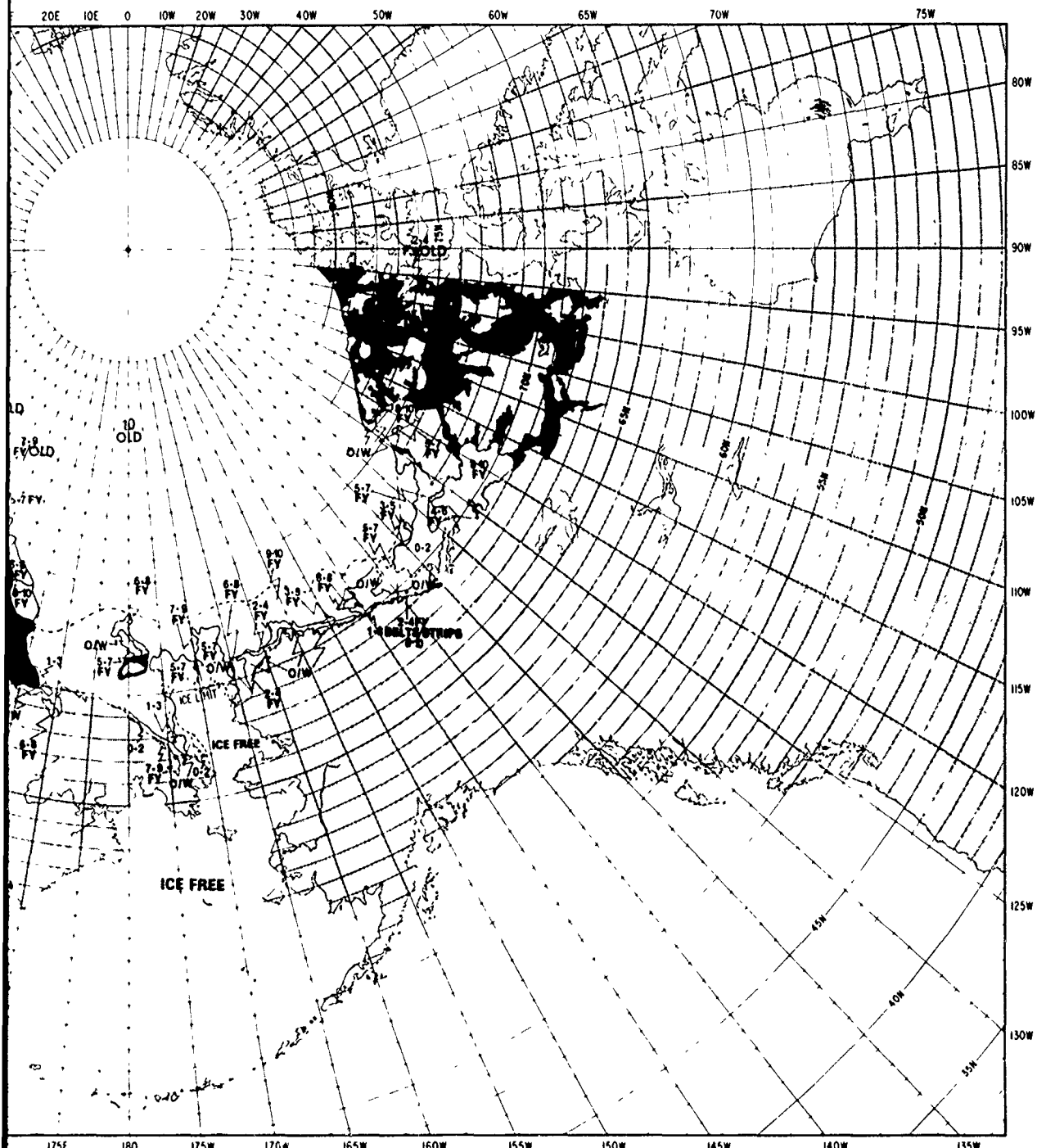
2



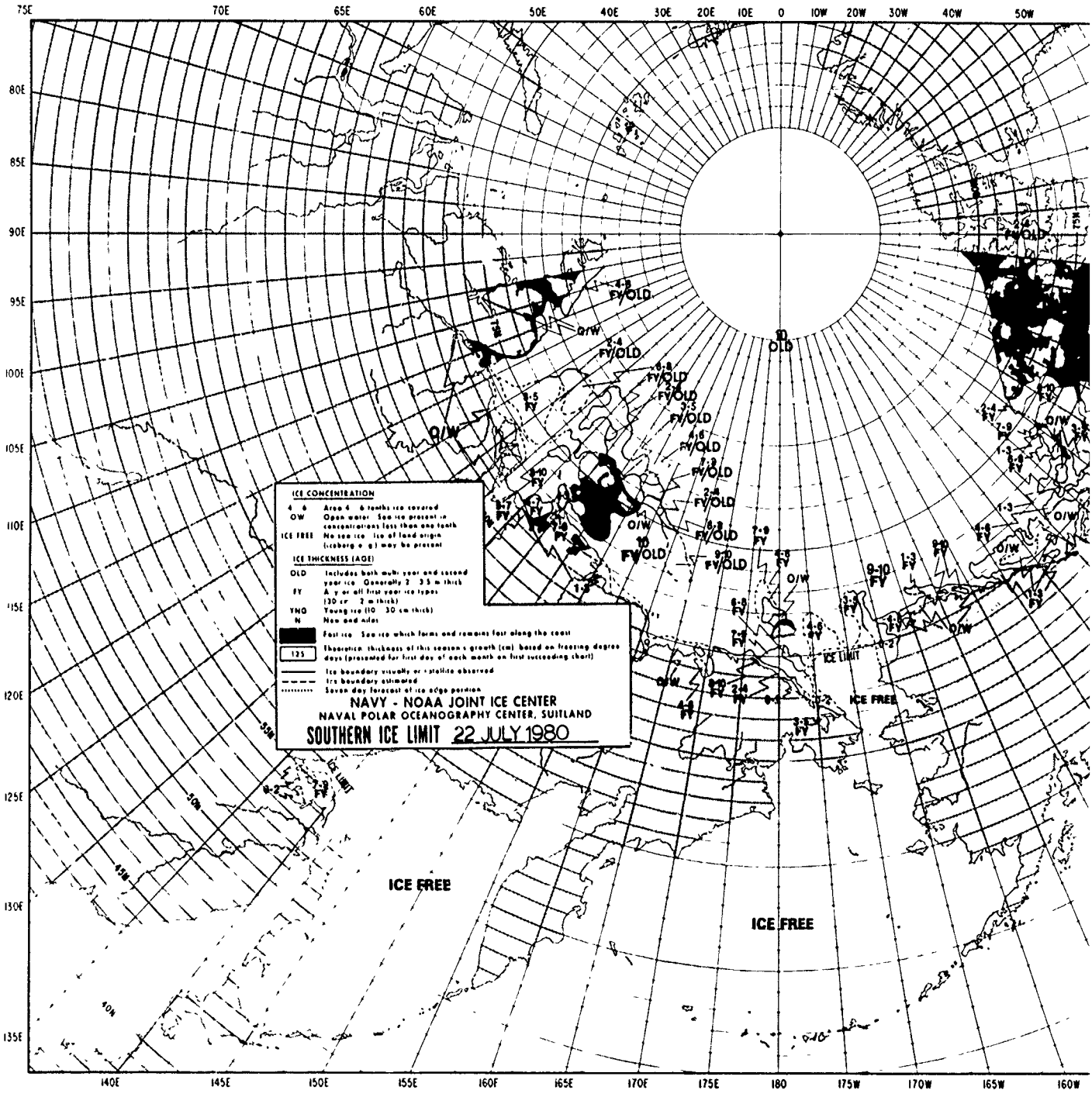
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 08 JULY 1980
ICE FREE
ICE FREE
ICE LIMIT
ICE LIMIT
10 OLD
10 FY
FY/OLD
O/W

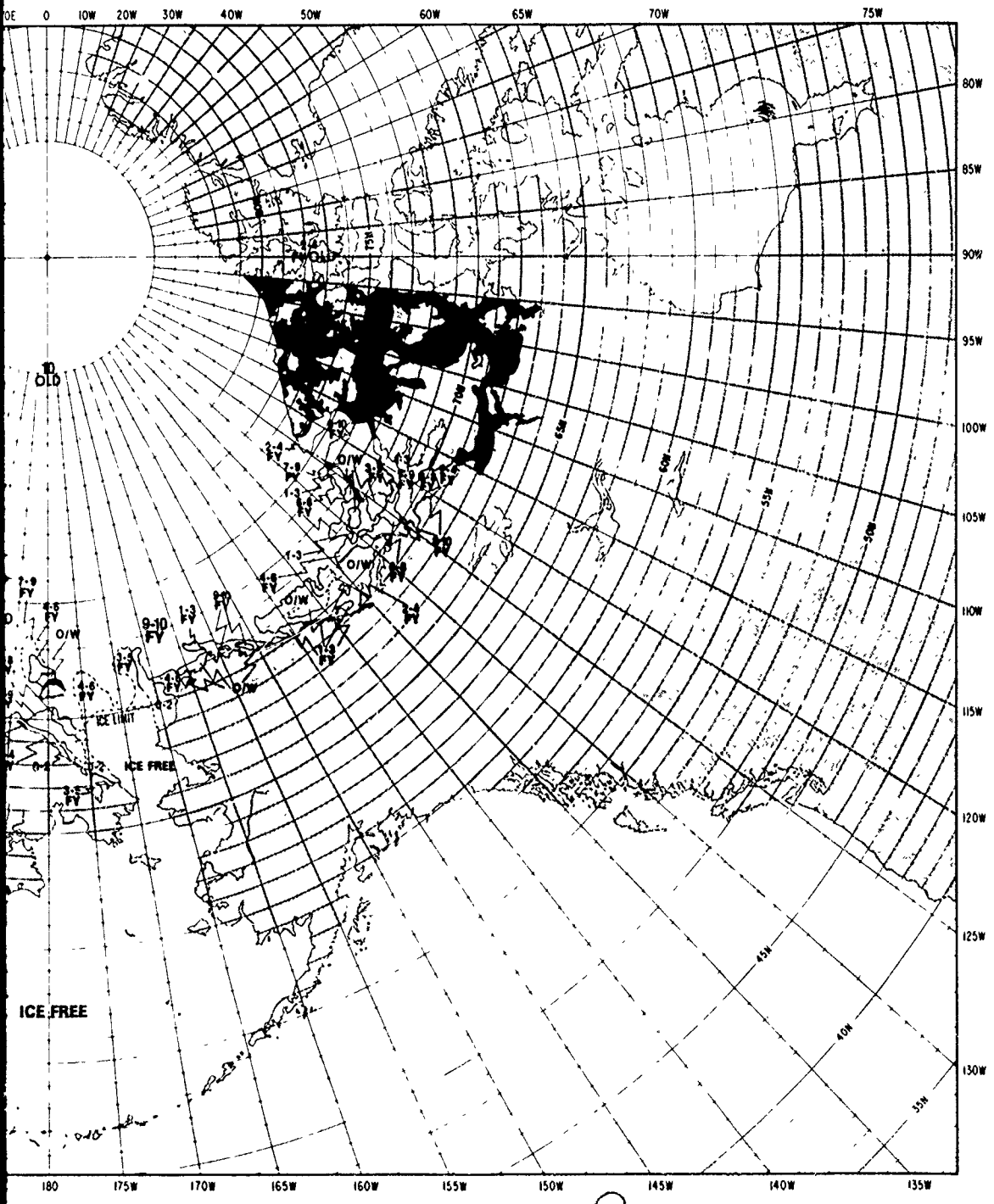

20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
O/W
LIMIT
ICE FREE


ICE CONCENTRATION
OW Open water
ICE FREE
ICE THICKNESS (AOR)
OLD
FY
TNG
N
Fast ice
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 15 JULY 1980
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W


20E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
175E
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
ICE FREE
ICE FREE
ICE LIMIT
O/W
FY/OLD
10
OLD
1-3
0-2
2-4
5-7
6-8
7-9
9-10
FY
45N
40N
35N
55N
60N
65N
70N

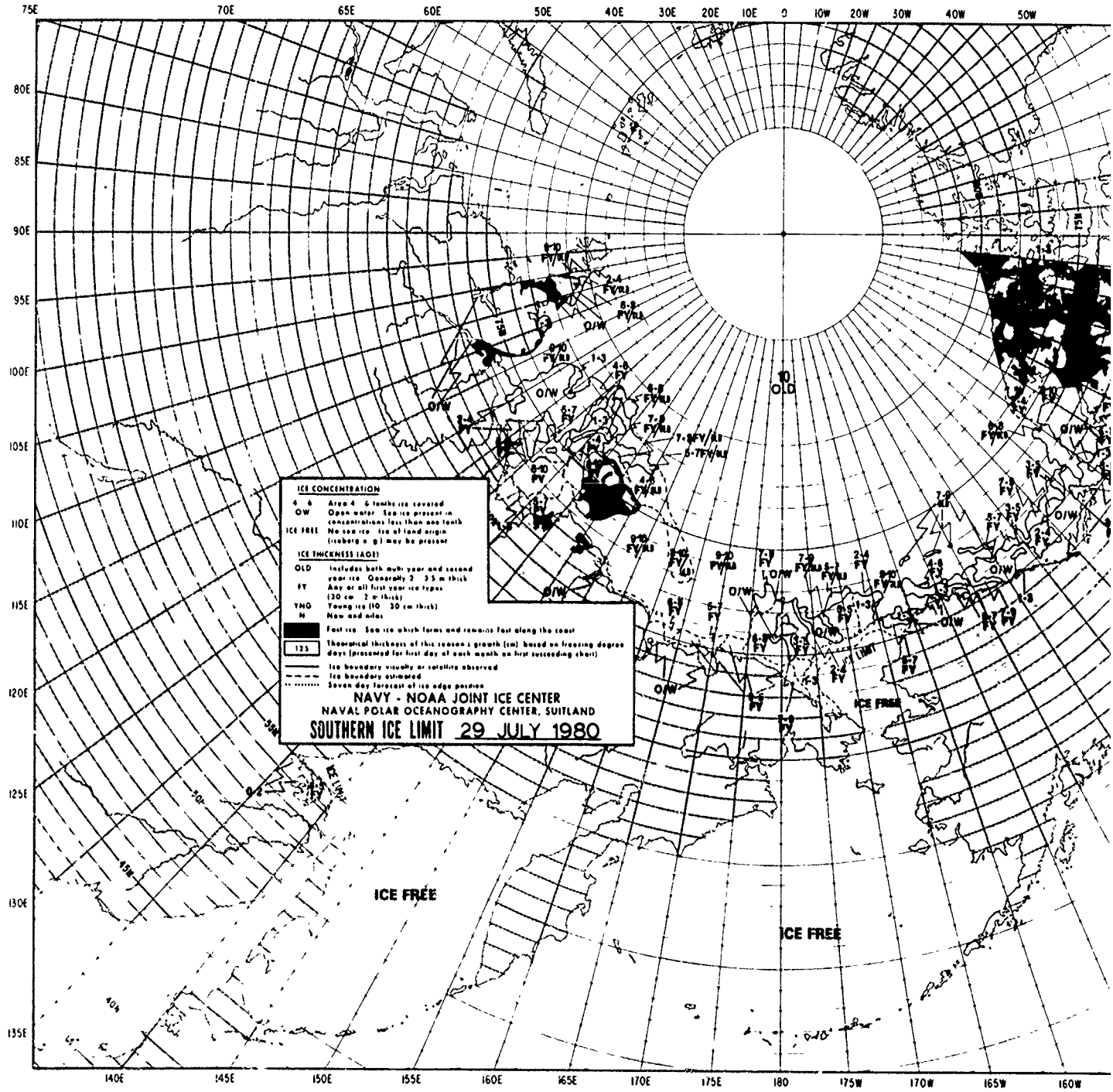
2

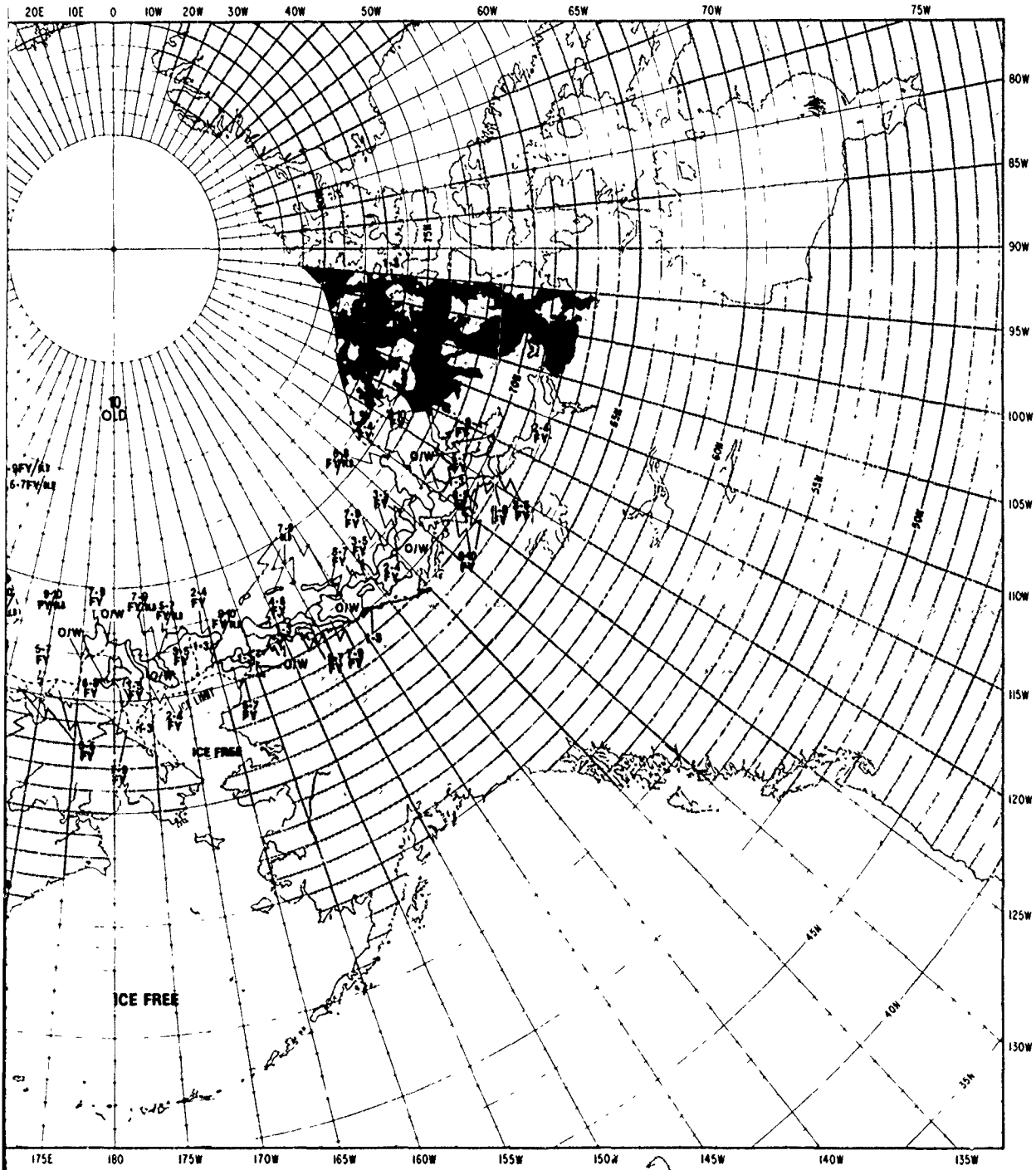

ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
O/W Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY A y or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice See ice which forms and remains fast along the coast
Thickness thickness of this season s growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 22 JULY 1980
ICE FREE
ICE FREE
ICE LIMIT
ICE LIMIT
O/W
FY/OLD
OLD
FY
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W
50N
45N
40N

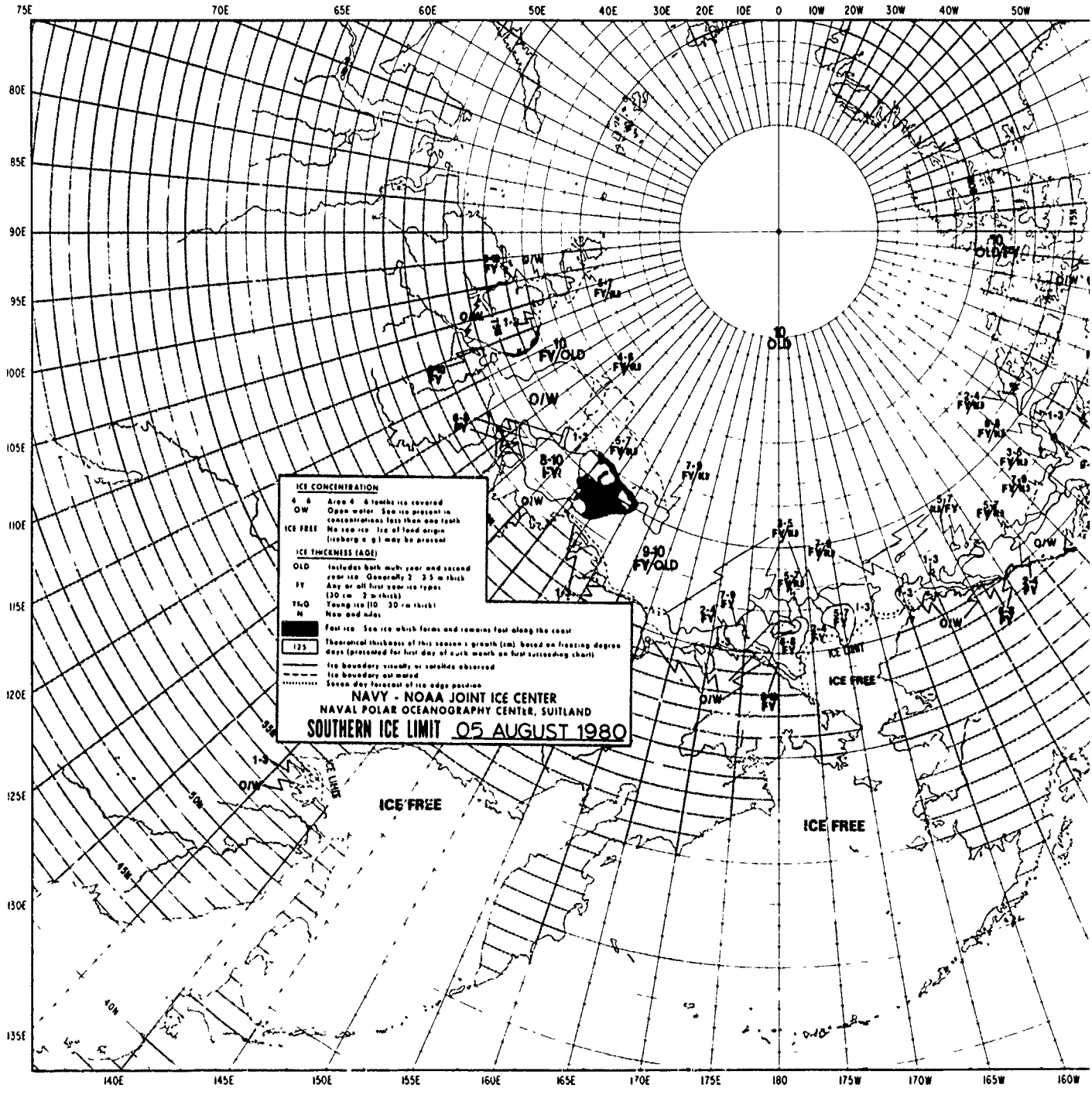


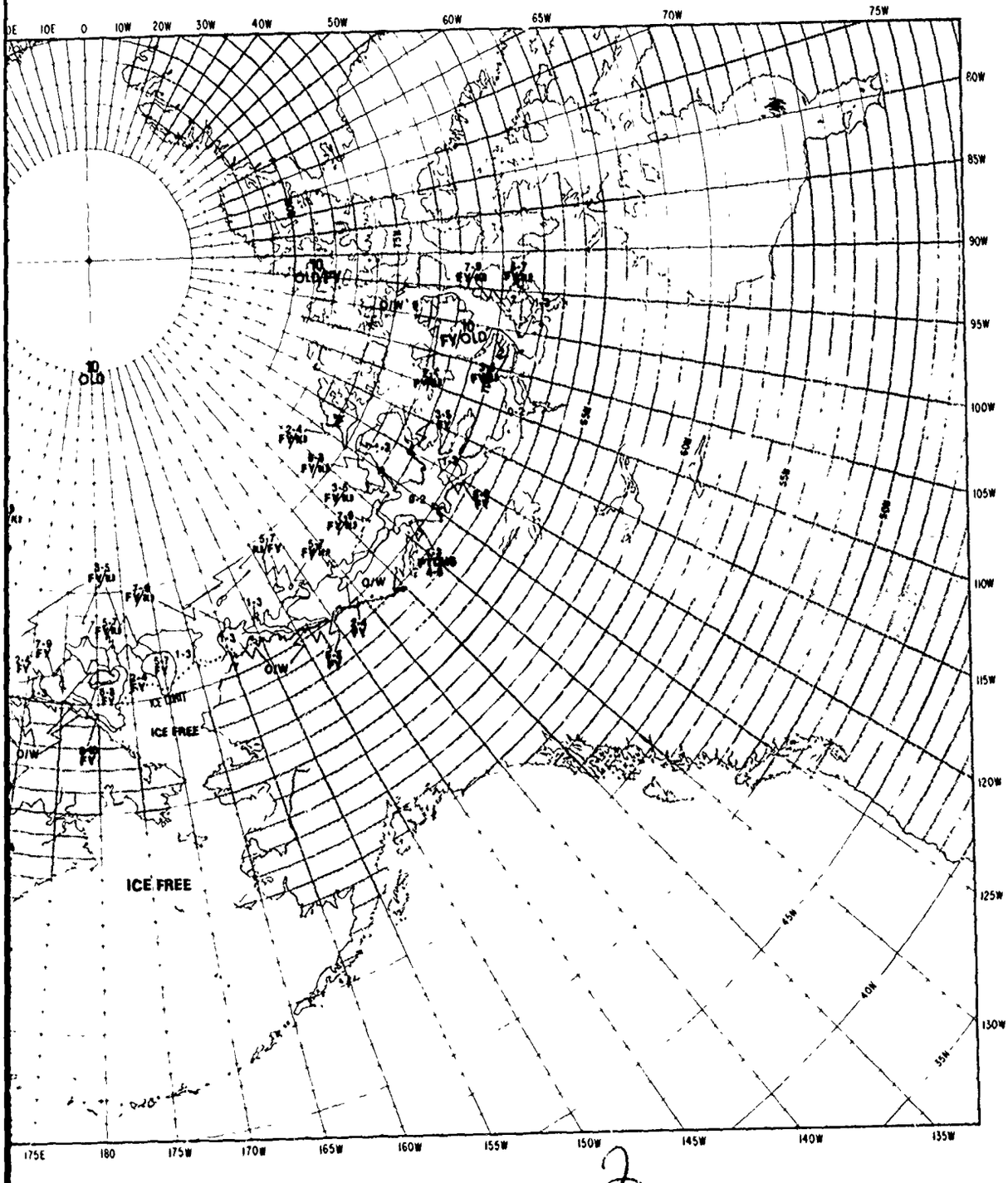
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10 OLD
9-10 FV
O/W
ICE LIMIT
ICE FREE
ICE FREE

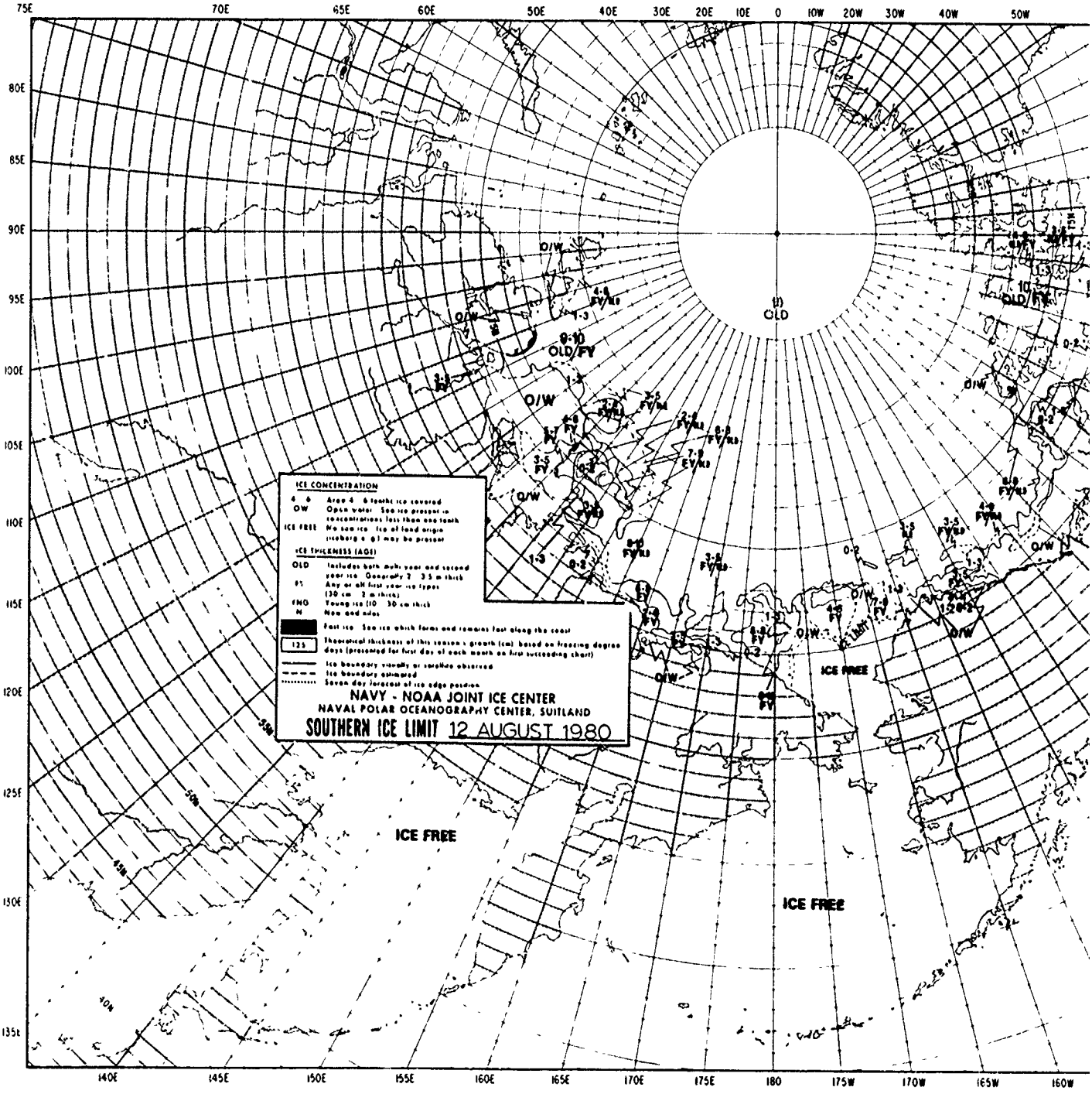
2

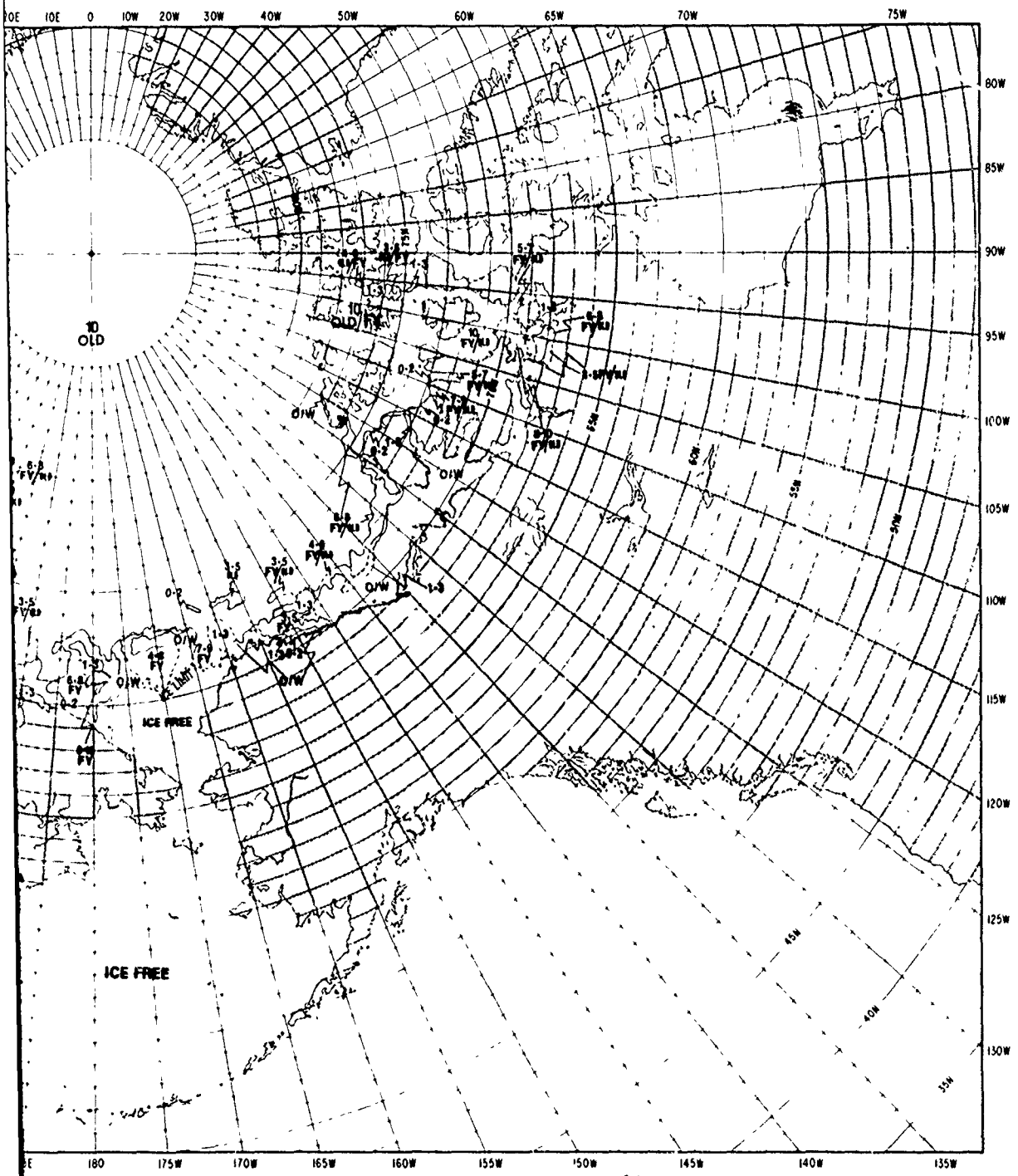

ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 29 JULY 1980
ICE FREE
ICE FREE
ICE FREE
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W

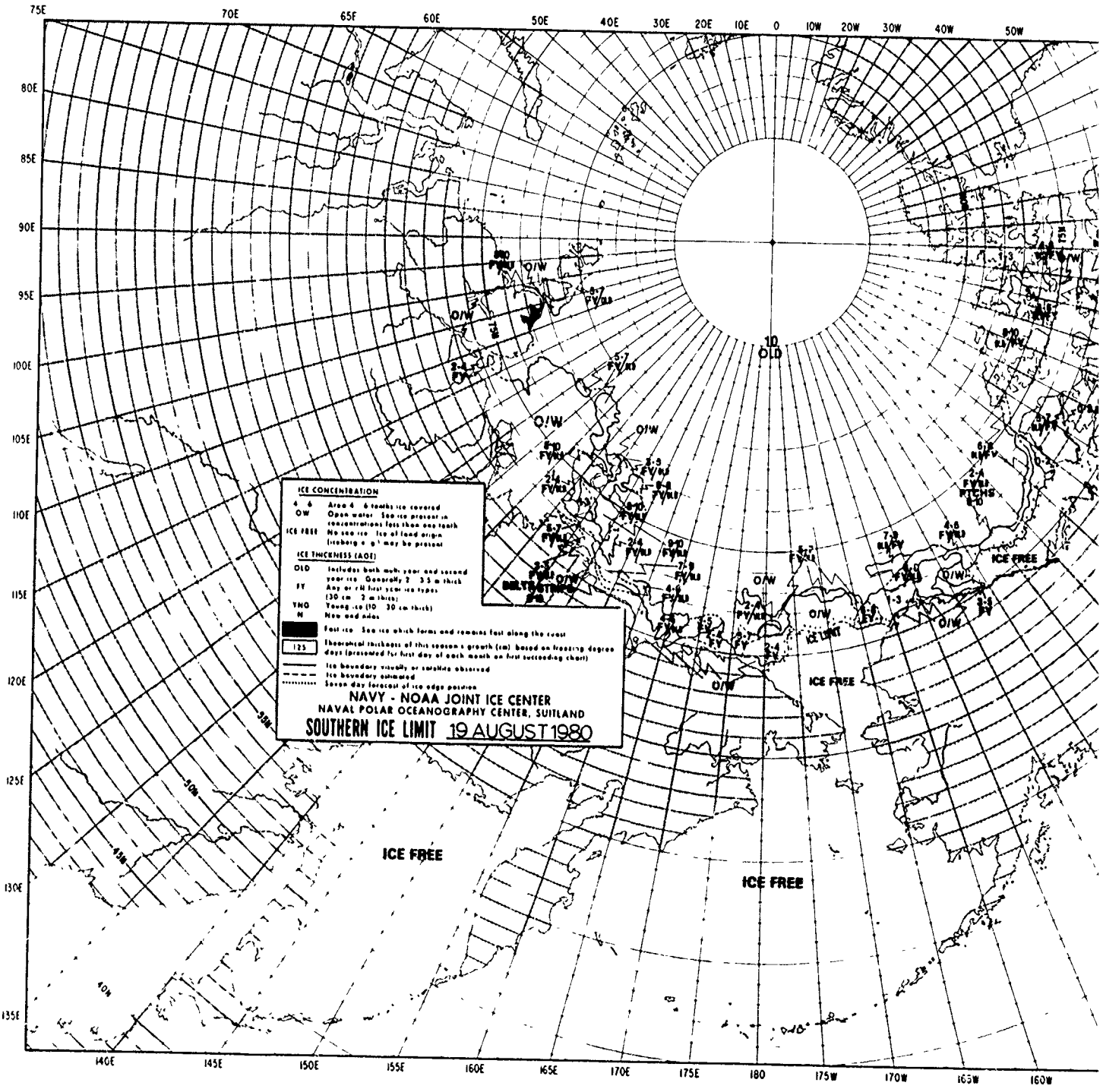

20E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
180
175E
ICE FREE
ICE FREE
O/W
LIMIT

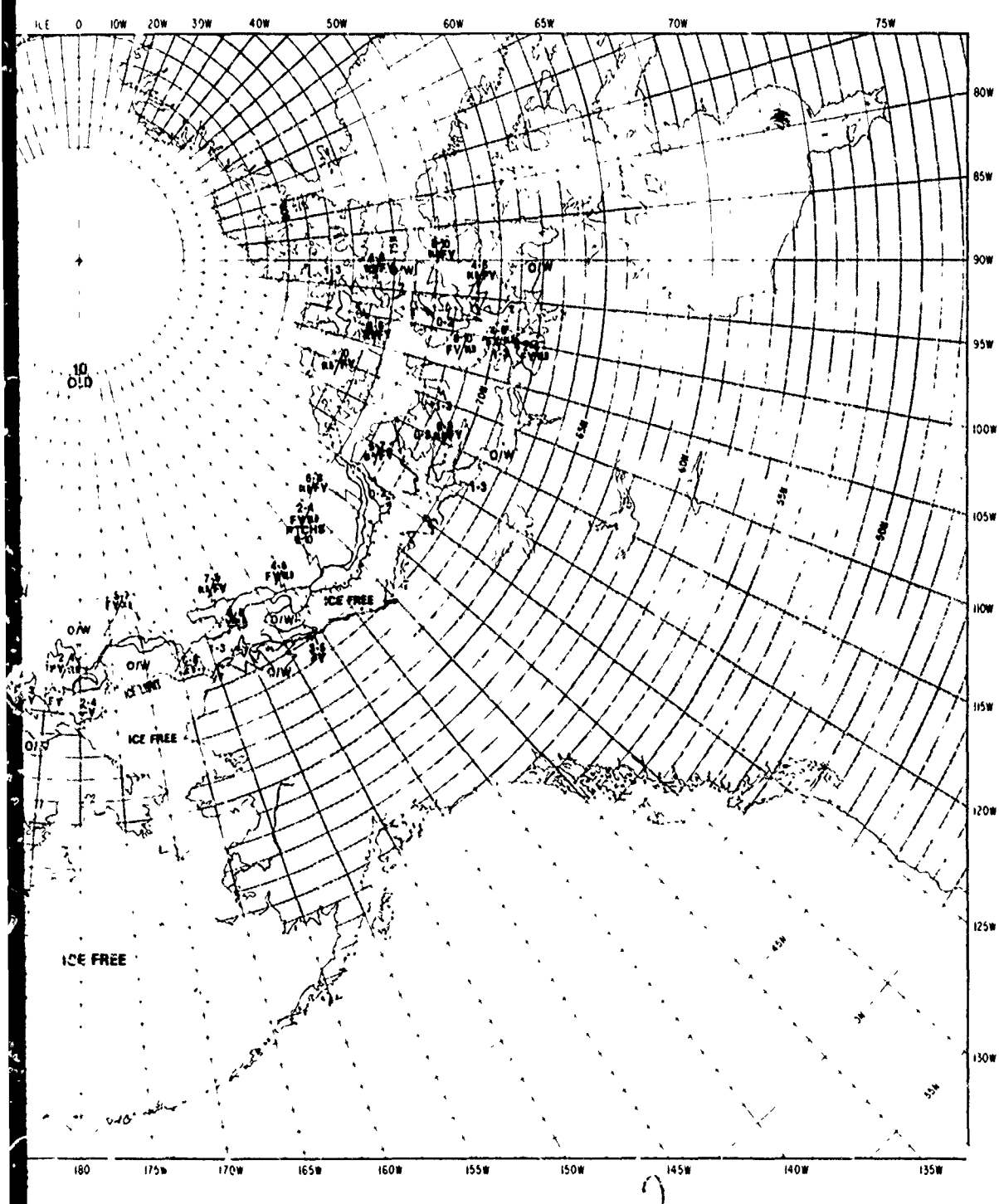

ICE CONCENTRATION
6 6 Area 6 6 tenths ice covered
O/W Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
THIN Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (processed for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 05 AUGUST 1980
ICE FREE
ICE FREE
ICE LIMIT
ICE FREE
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W


ICE FREE
ICE FREE
ICE LIMIT
O/W
O/W
O/W

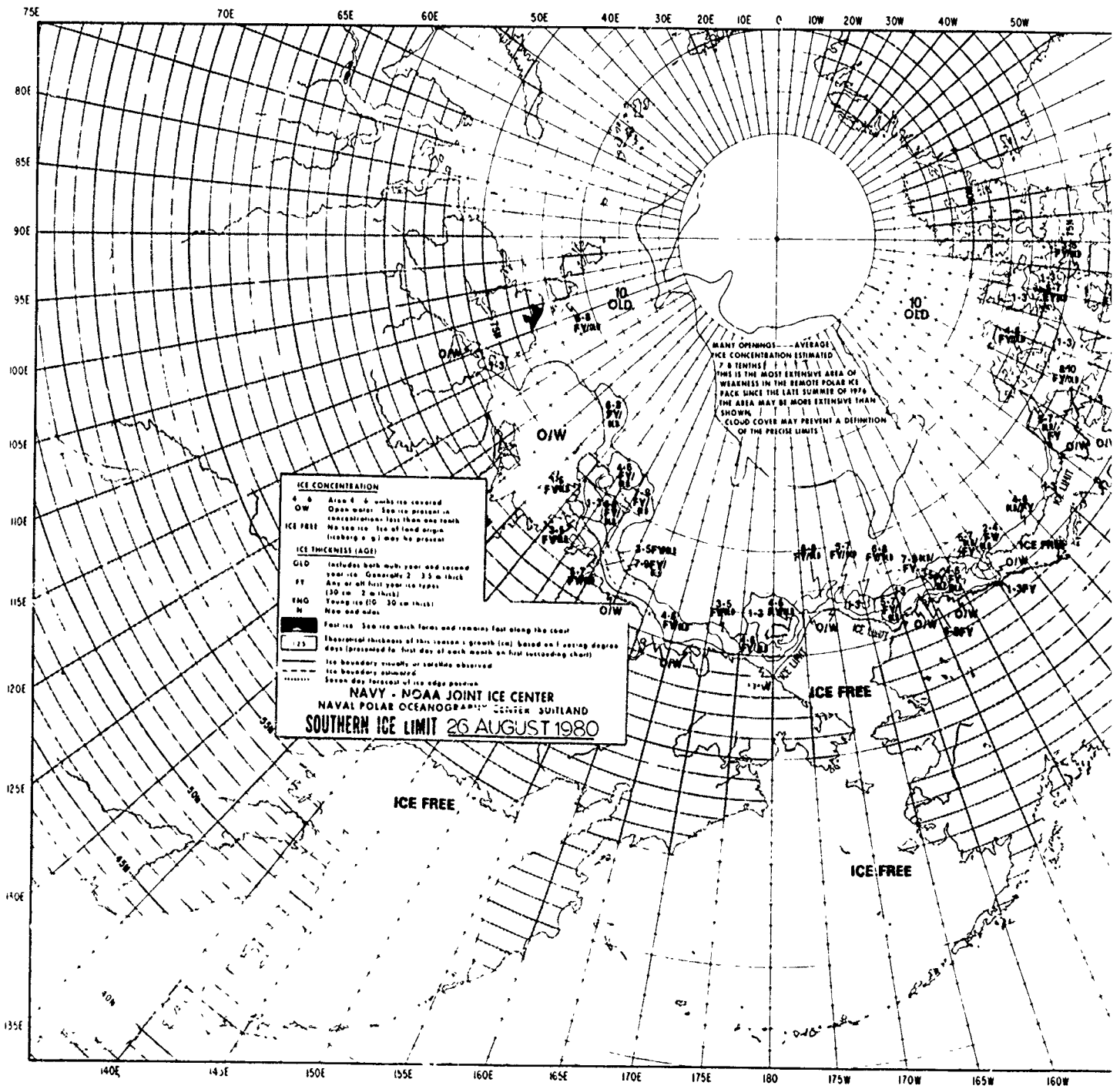

ICE CONCENTRATION
4 - 6 Area 4 - 6 tenths ice covered
OW Open water. See ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice. Generally 2 - 3.5 m thick
FY Any or all first year ice types (30 cm - 2 m thick)
FNO Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
Theoretical thickness of this season's growth (cm) based on freezing degree days (processed for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 12 AUGUST 1980
ICE FREE
ICE FREE
ICE FREE
O/W
OLD
OLD/FY
FY
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W

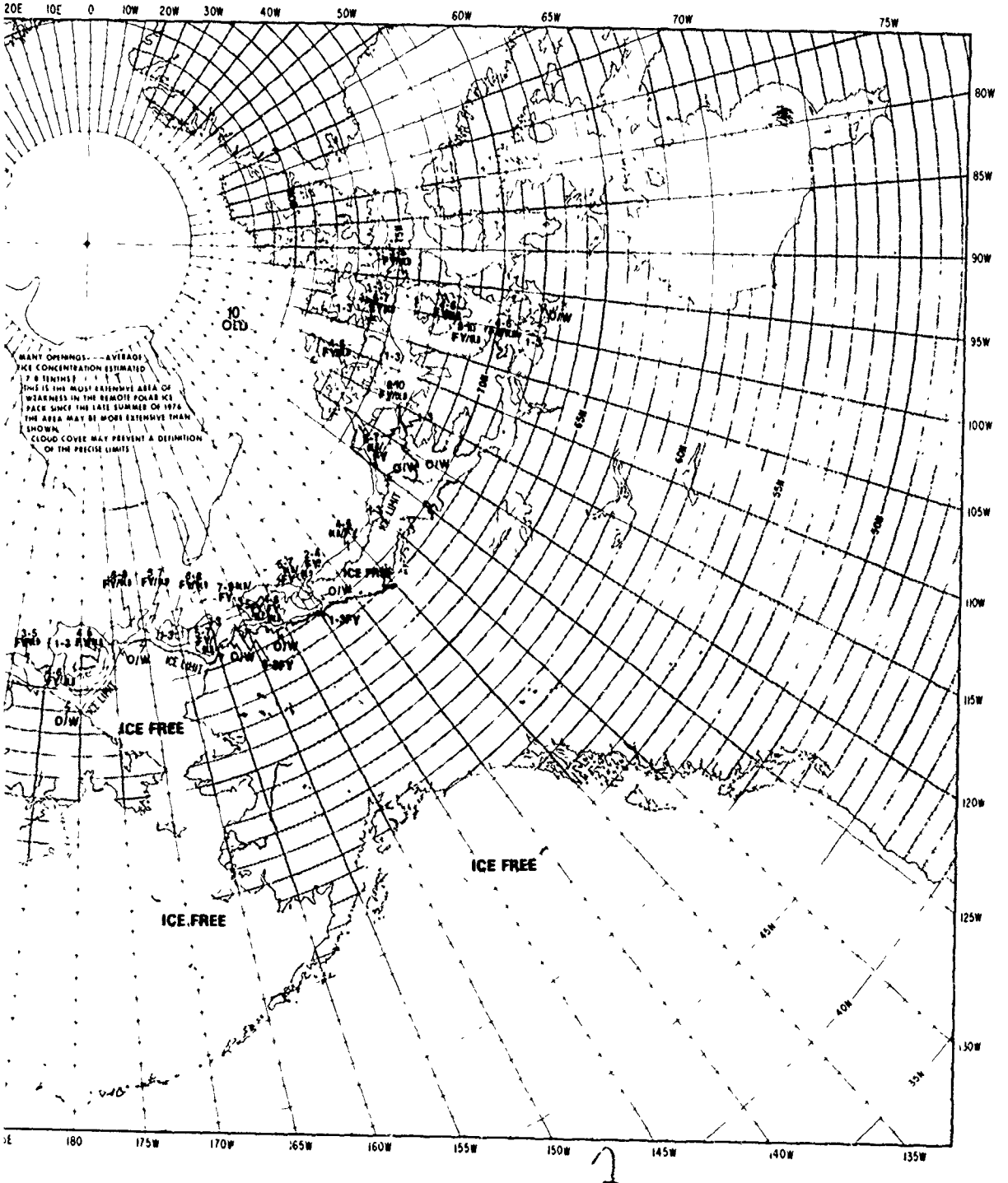

10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
180
10
OLD
ICE FREE
ICE FREE
O/W
45N
40N
35N


75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W
10
OLD
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AOI)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG N Young ice (10 30 cm thick)
New and nilas
Fast ice See ice which forms and remains fast along the coast
125
Theoretical thickness of this season s growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary mostly or completely observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 19 AUGUST 1980
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
O/W
50%
40%
10%


ICE
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10
OLD
O/W
ICE FREE
ICE LIMIT

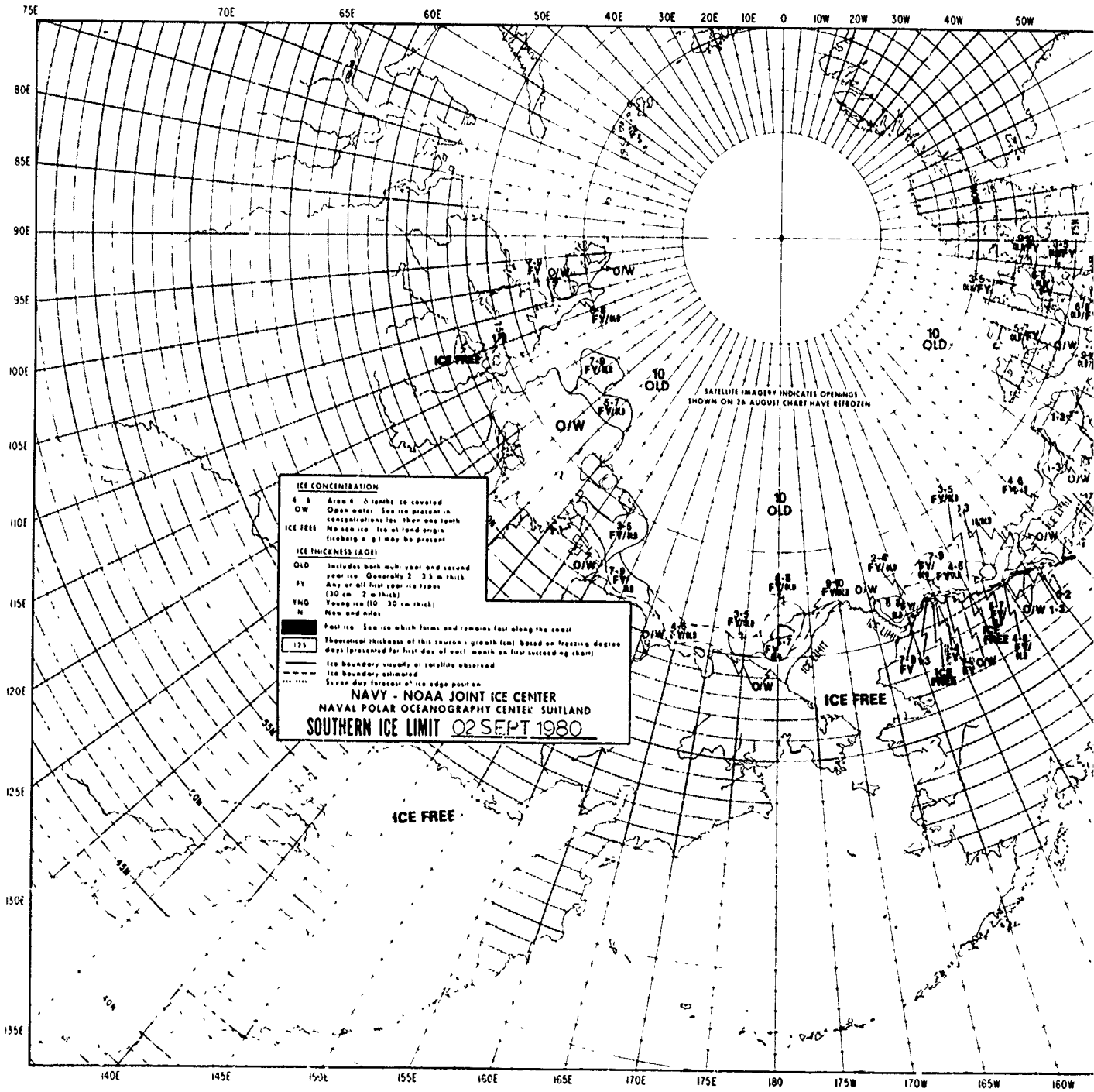
2

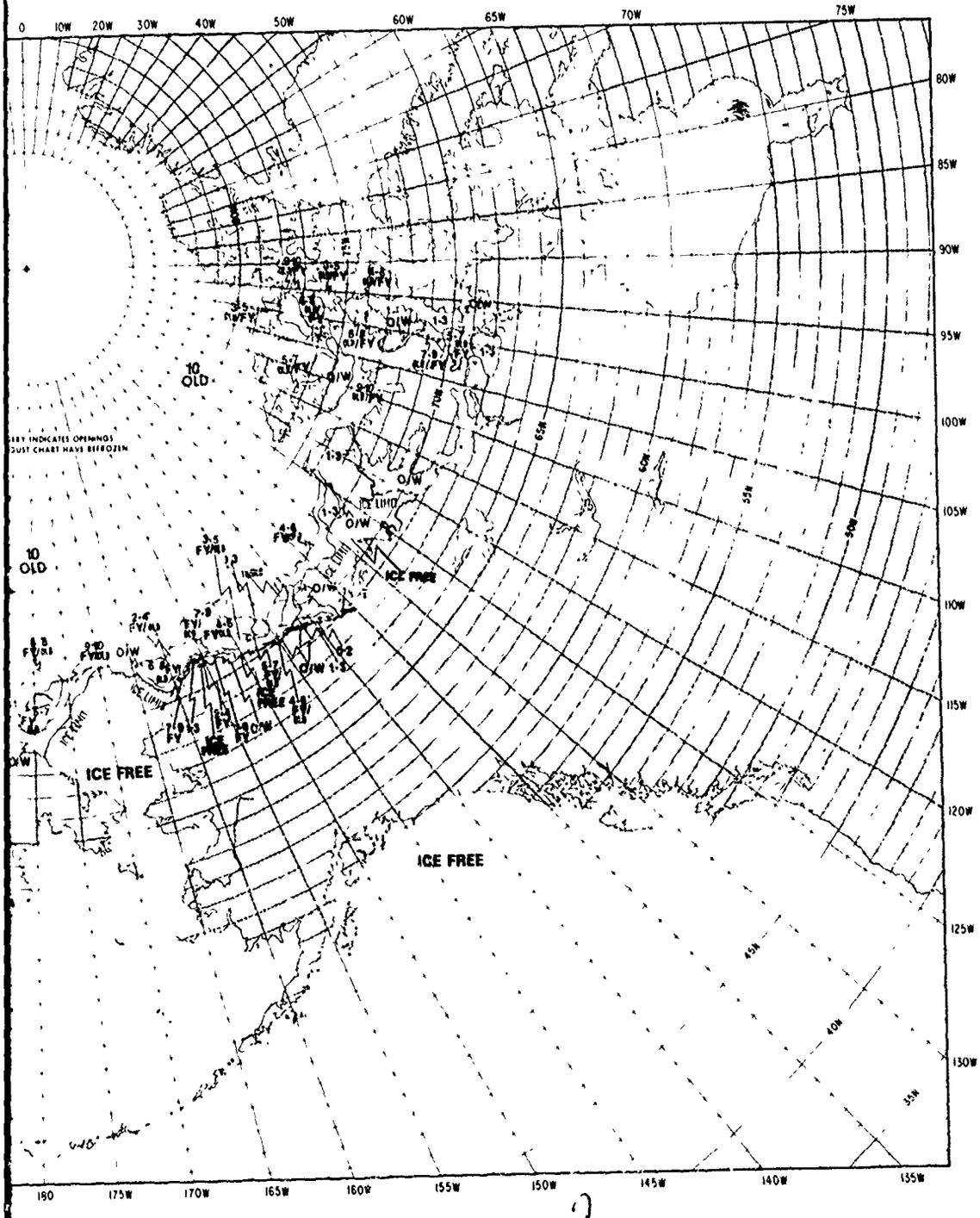

75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W
MANY OPENINGS - - - AVERAGE ICE CONCENTRATION ESTIMATED 7-8 TENTHS
THIS IS THE MOST EXTENSIVE AREA OF WEAKNESS IN THE REMOTE POLAR ICE PACK SINCE THE LATE SUMMER OF 1976
THE AREA MAY BE MORE EXTENSIVE THAN SHOWN
CLOUD COVER MAY PREVENT A DEFINITION OF THE PRECISE LIMITS
10 OLD
O/W
ICE FREE
ICE FREE
ICE FREE
ICE CONCENTRATION
Open water
ICE FREE
ICE THICKNESS (AGE)
OLD
FY
YNG
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 26 AUGUST 1980



MANY OPENINGS - - - AVERAGE ICE CONCENTRATION ESTIMATED 7-8 TENTHS
THIS IS THE MOST EXTENSIVE AREA OF WEAKNESS IN THE REMOTE POLAR ICE PACK SINCE THE LATE SUMMER OF 1976
THE AREA MAY BE MORE EXTENSIVE THAN SHOWN.
CLOUD COVER MAY PREVENT A DEFINITION OF THE PRECISE LIMITS
10 OLD
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
O/W
20E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
180

2


75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W
ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (icebergs e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
TNG Young ice (10 30 cm thick)
N New and nilas
Fast ice See ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on final succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 02 SEPT 1980
SATELLITE IMAGERY INDICATES OPENINGS SHOWN ON 26 AUGUST CHART HAVE REFROZEN
ICE FREE
ICE FREE
ICE FREE
10 OLD
10 OLD
10 OLD
O/W
O/W
O/W


0
10W
20W
30W
40W
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60W
65W
70W
75W
80W
85W
90W
95W
100W
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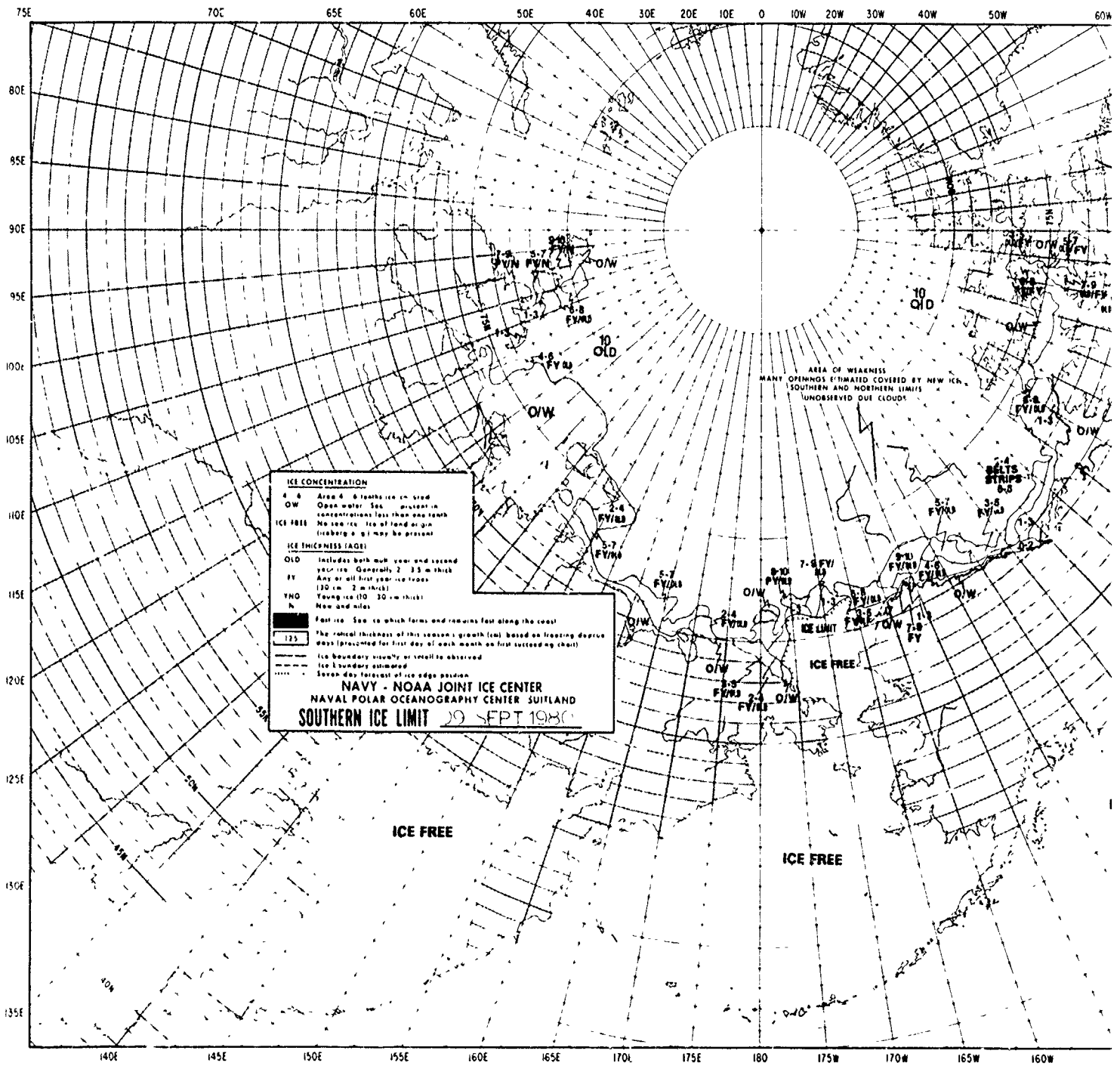
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
180
10
OLD
ICE FREE
ICE FREE
ICE FREE
O/W
ICE LIMIT

2



ICE CONCENTRATION
4 6 Area 4 6 tenths ice cm sized
OW Open water Sea present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3.5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 The critical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or retail to observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 29 SEPT 1980
AREA OF WEAKNESS
MANY OPENINGS ESTIMATED COVERED BY NEW ICE
SOUTHERN AND NORTHERN LIMITS
UNOBSERVED DUE CLOUDS
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
BELTS STRIPS
10 OLD
10 OLD
O/W
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
60W
80E
85E
90E
95E
100E
105E
110E
115E
120E
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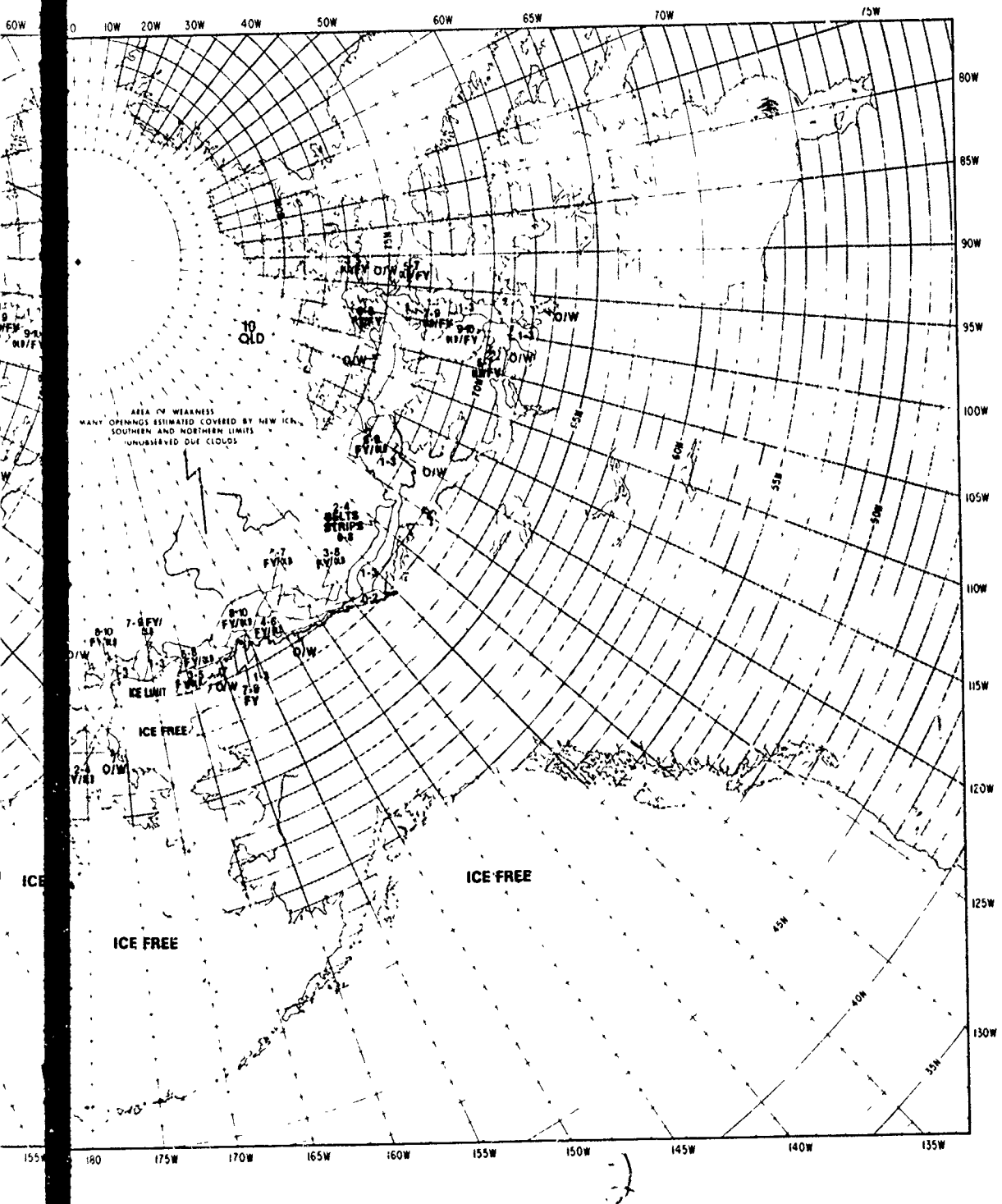
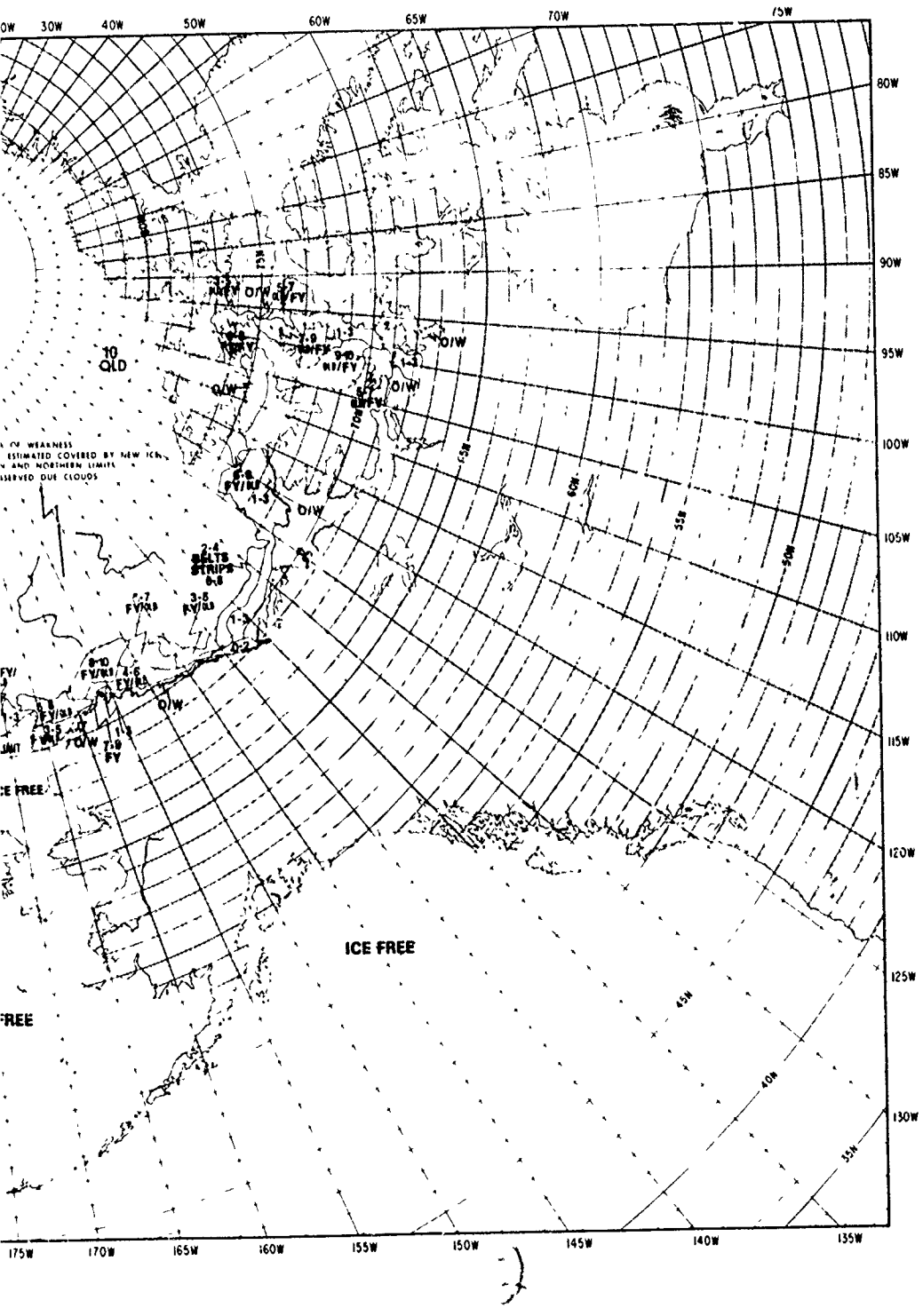
180
175W
170W
165W
160W



AREA OF WEAKNESS
MANY OPENINGS ESTIMATED COVERED BY NEW ICE
SOUTHERN AND NORTHERN LIMITS
UNOBSERVED DUE CLOUDS
10 QLD
2-4 BELTS STRIPS
ICE LIMIT
ICE FREE
ICE FREE
ICE FREE
O/W


30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
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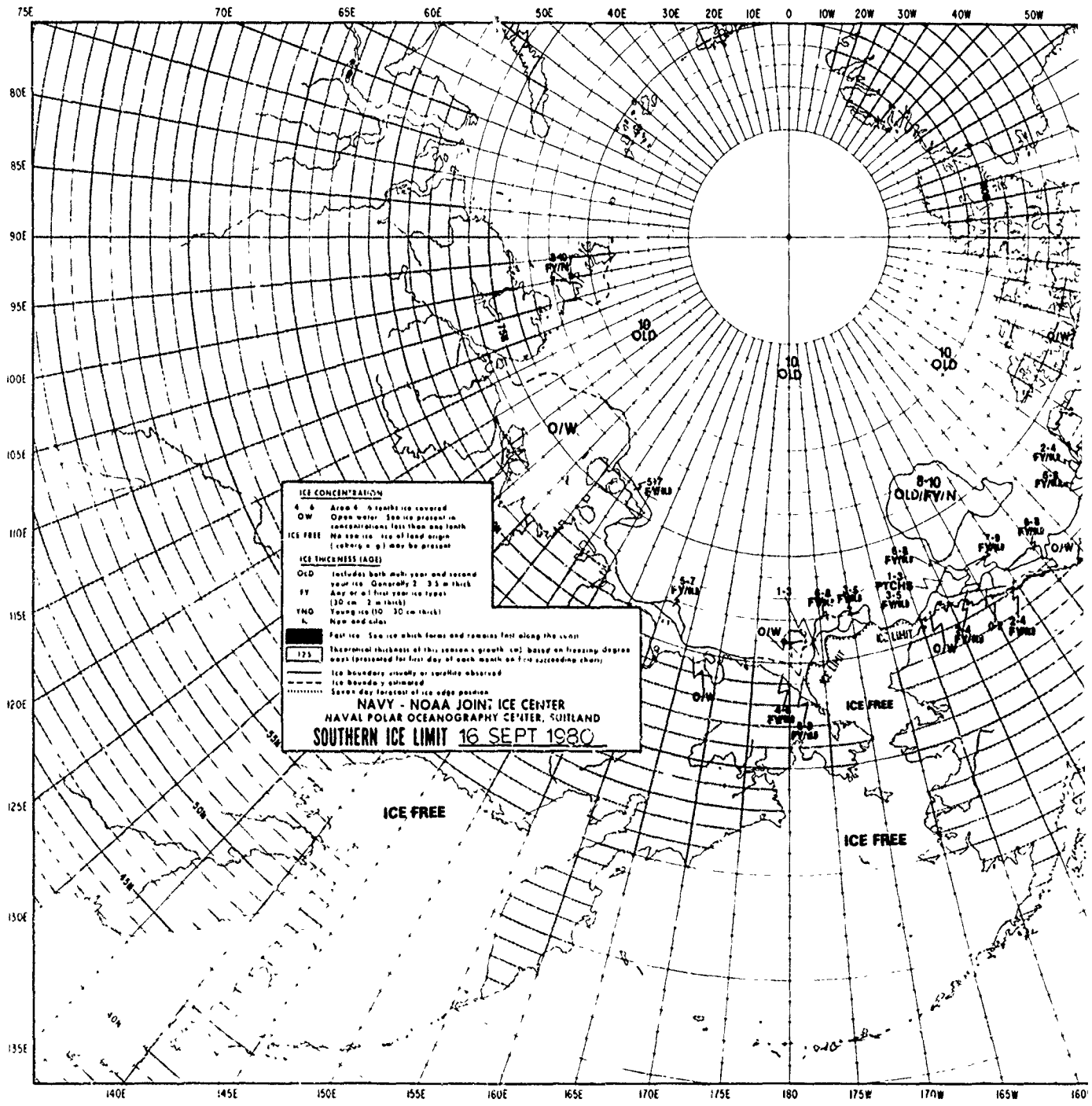
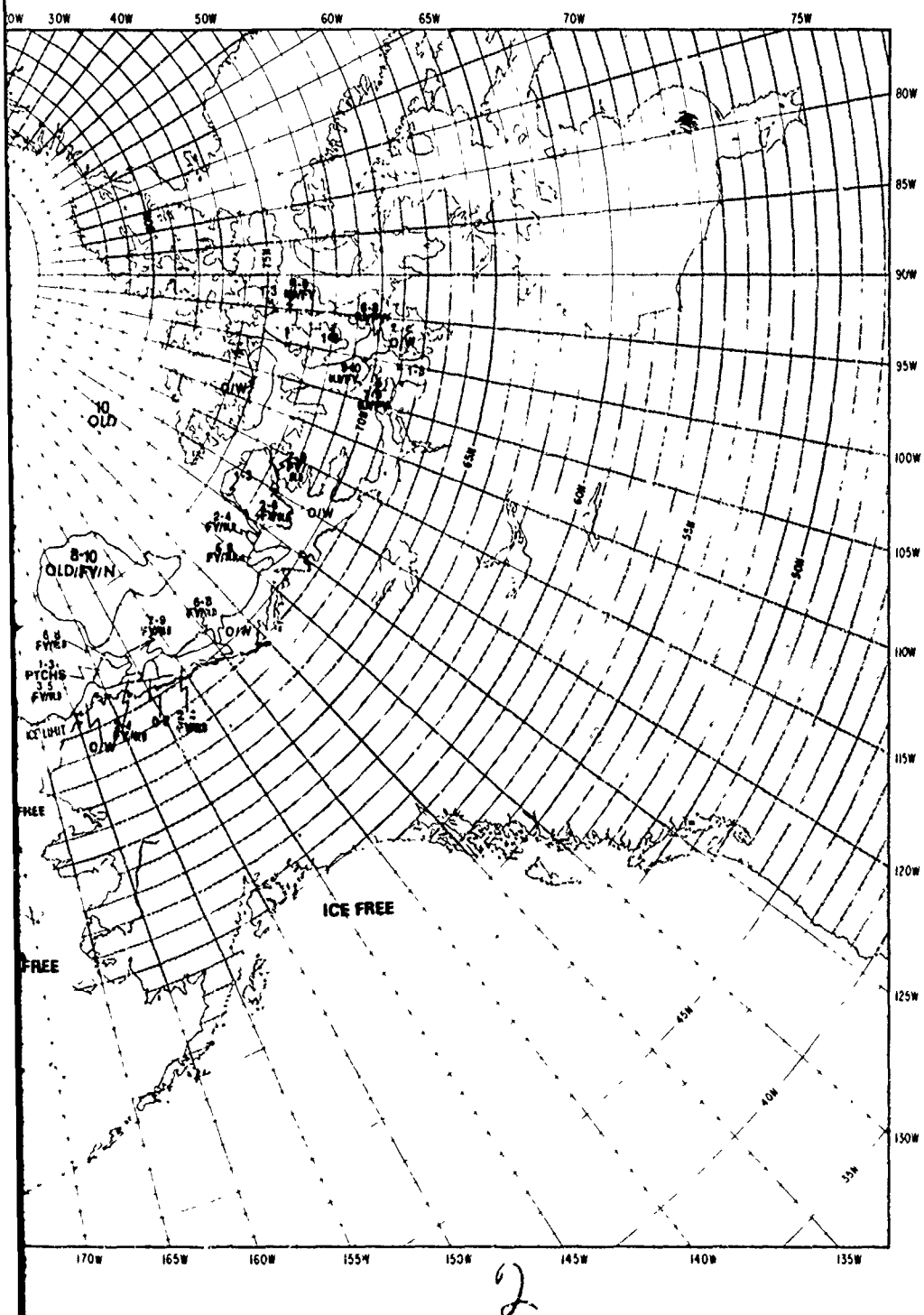
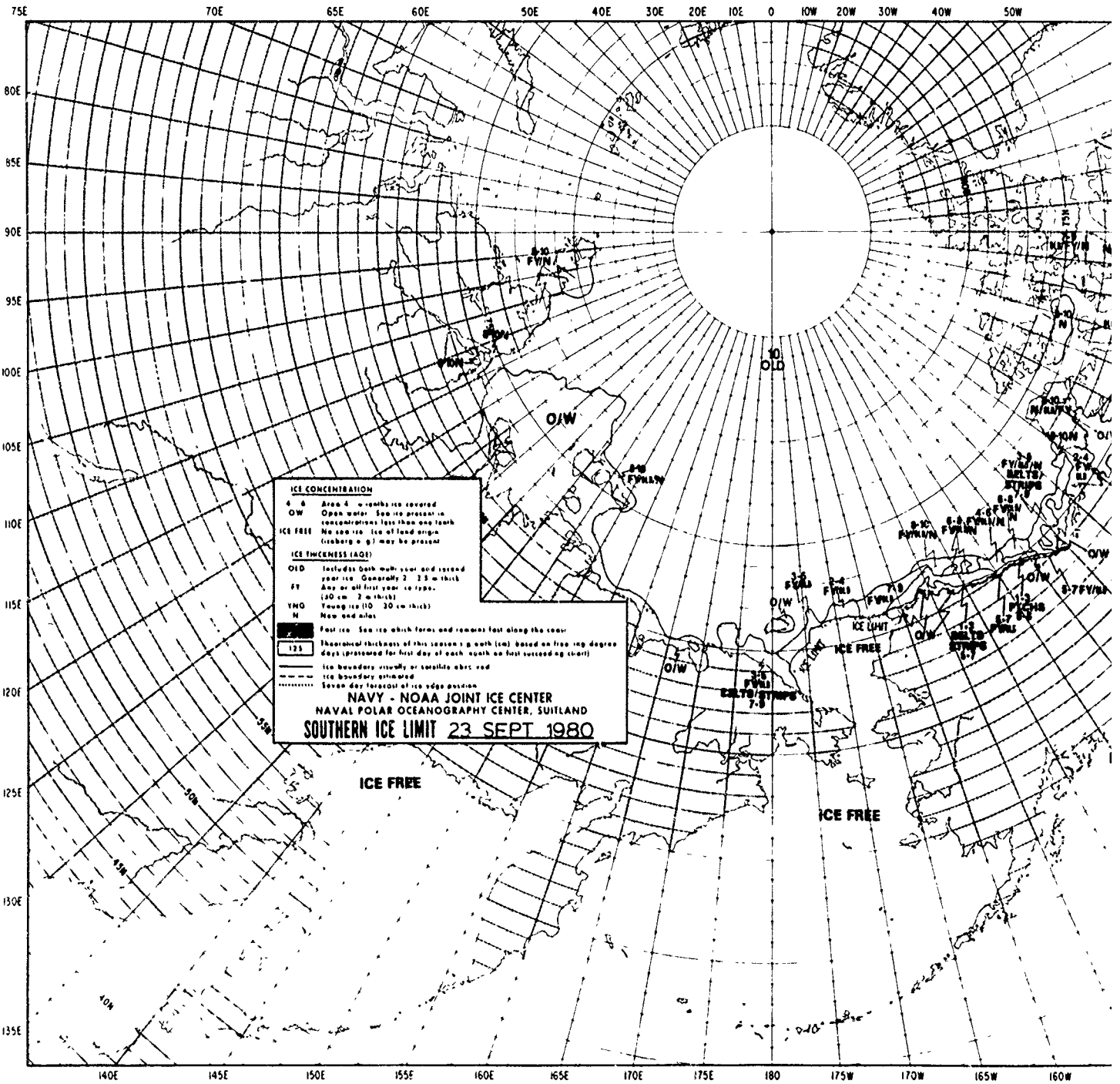
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
10
QLD
O/W
ICE FREE
ICE FREE
FREE

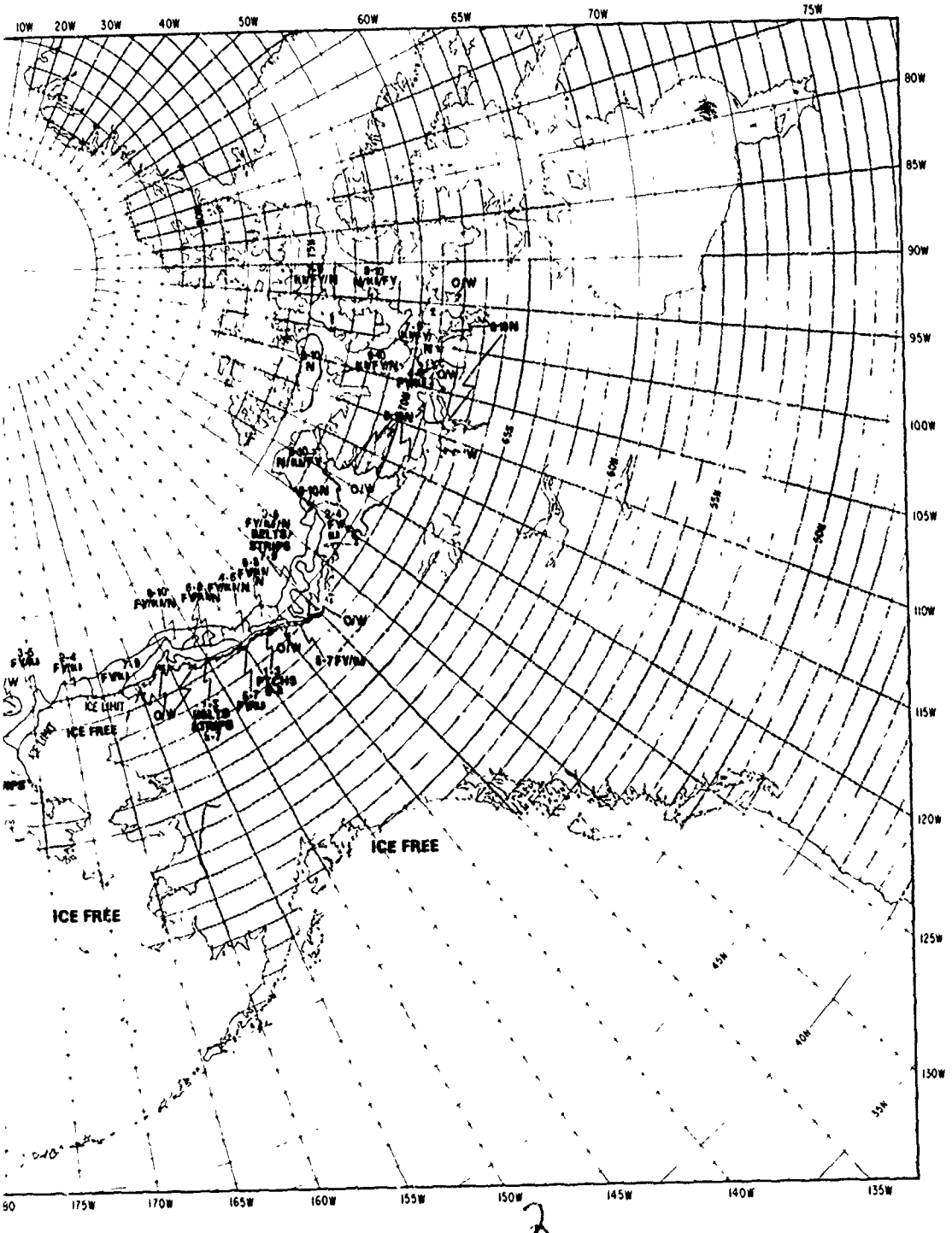


ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 16 SEPT 1980
ICE FREE
ICE FREE
ICE FREE
O/W
10 OLD
10 OLD
10 OLD
8-10 OLD/FY/N
1-3 PTCHS
ICE LIMIT


30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
10
OLD
8-10
OLD/FY/N
ICE LIMIT
O/W
ICE FREE
FREE

2


ICE CONCENTRATION
4 6 Area 4 - 6 tenths ice covered
OW Open water. See ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi-year and second year ice. Generally 2 - 3 m thick
FY Any or all first year ice types. (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
Theoretical thickness of this season's growth (ice) based on freezing degree days (processed for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 23 SEPT 1980
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
O/W
O/W
O/W
O/W
O/W
O/W
OLD
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W


10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
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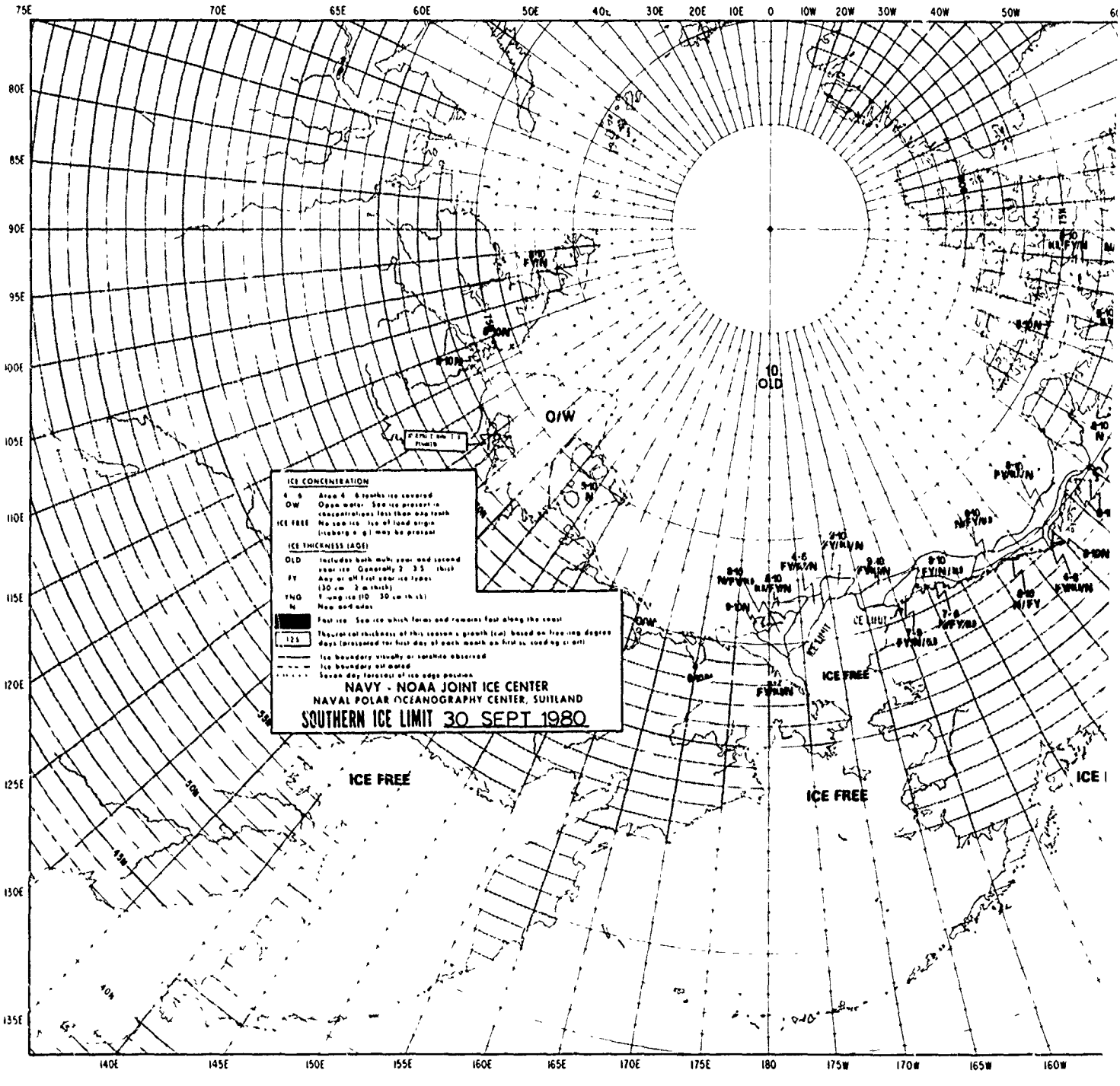
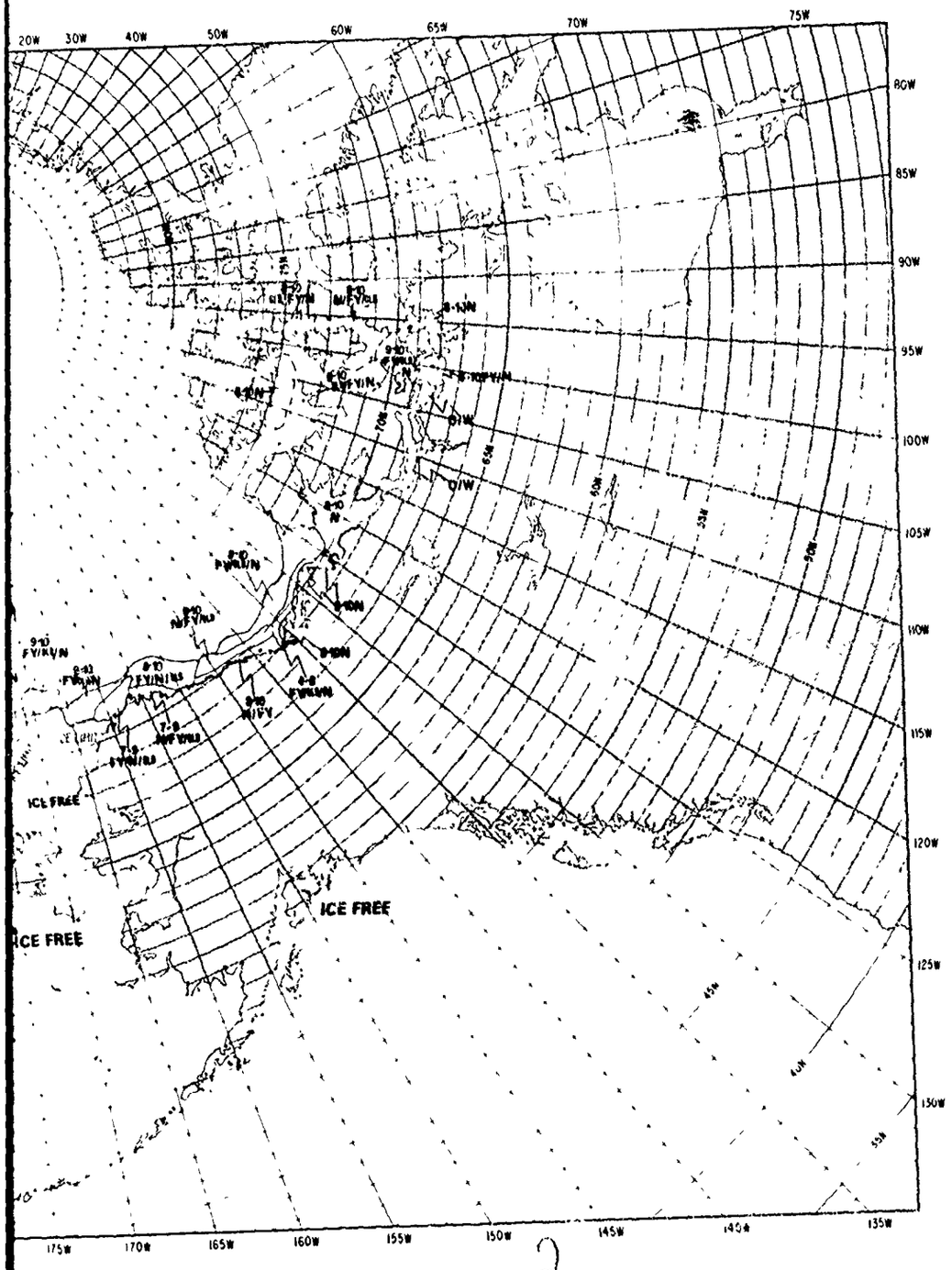
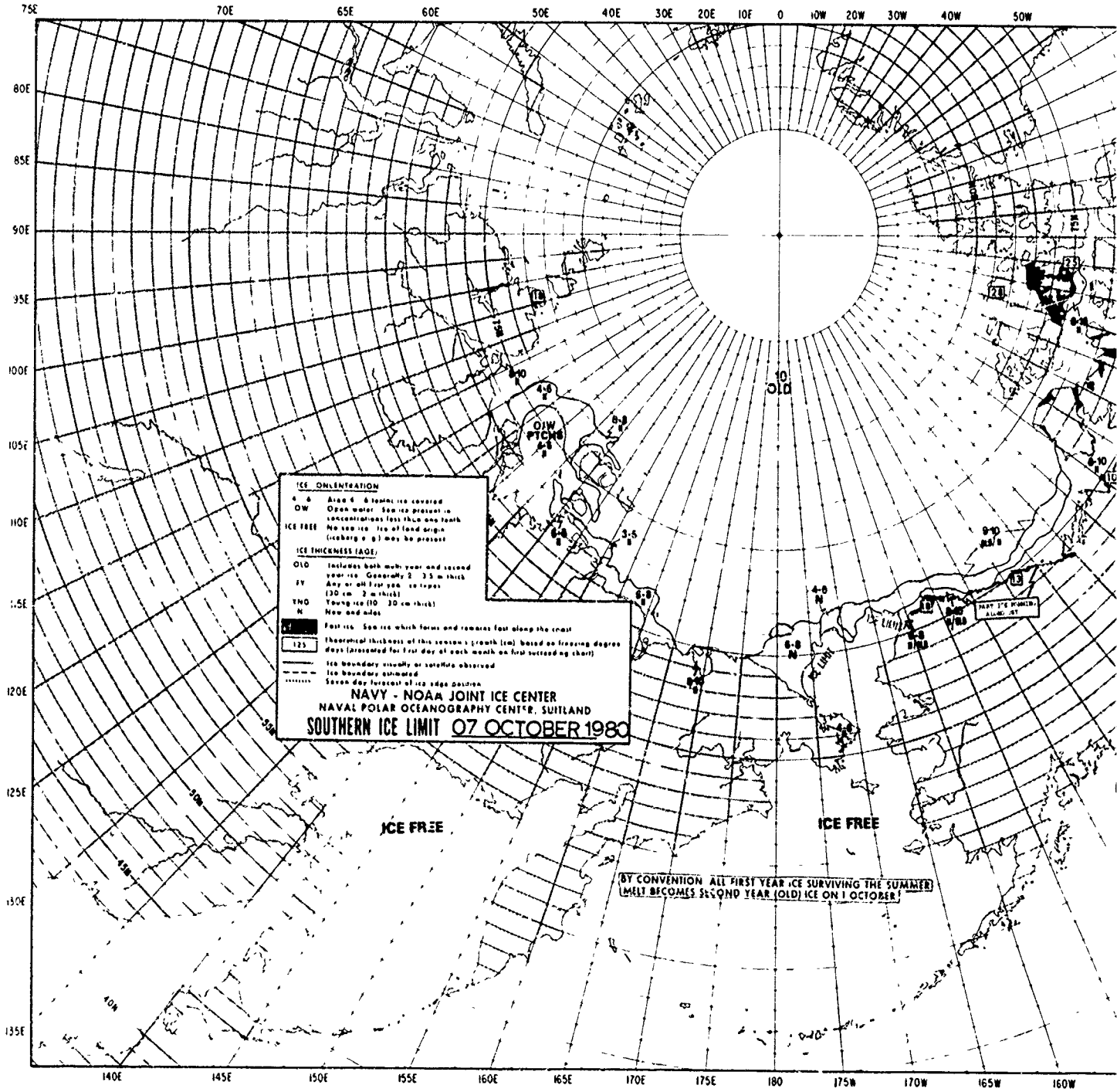
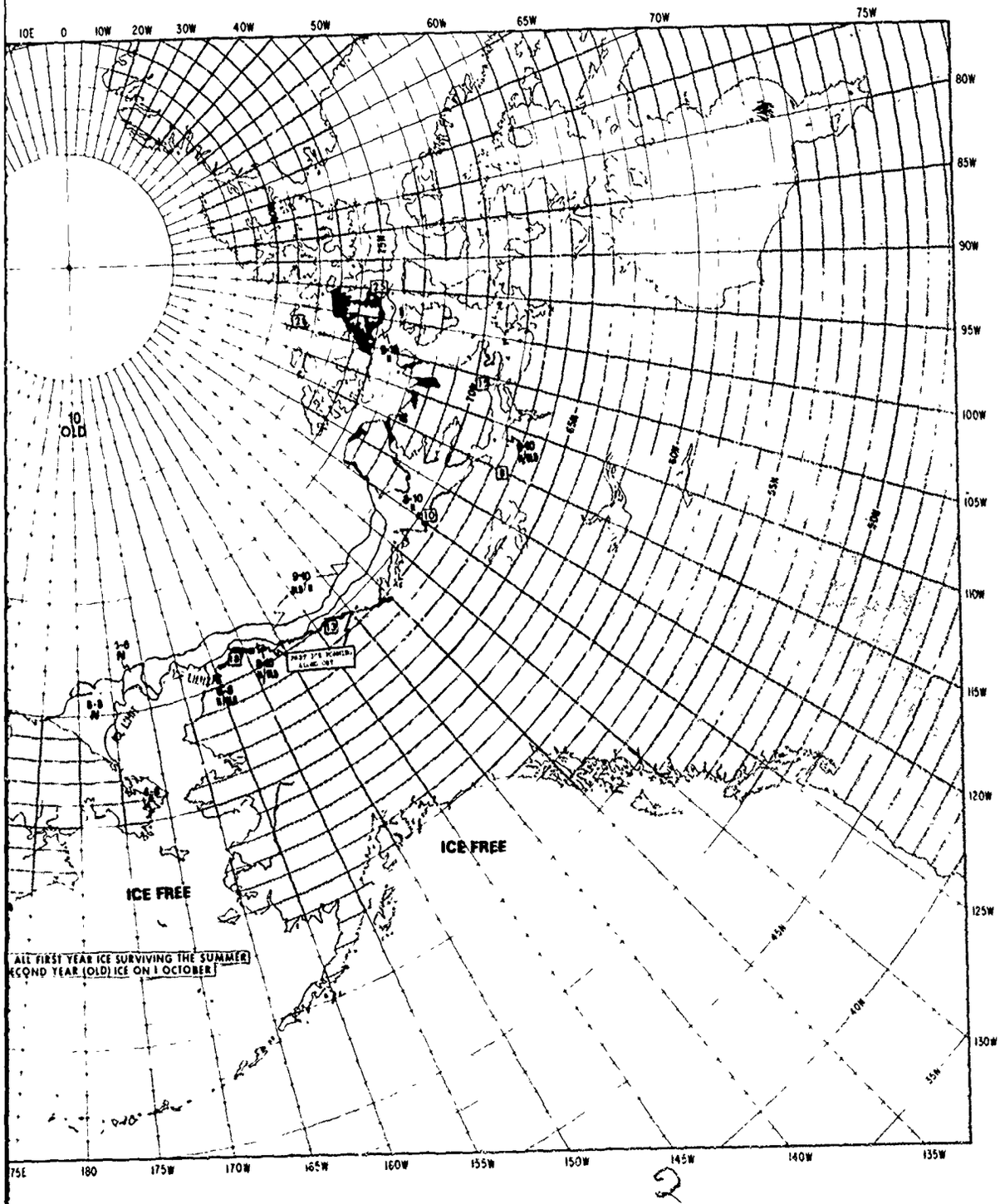
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
O/W
ICE LIMIT
ICE FREE
ICE FREE
ICE FREE
BELTS/STRIPS
PTCHS
45N
40N
35N



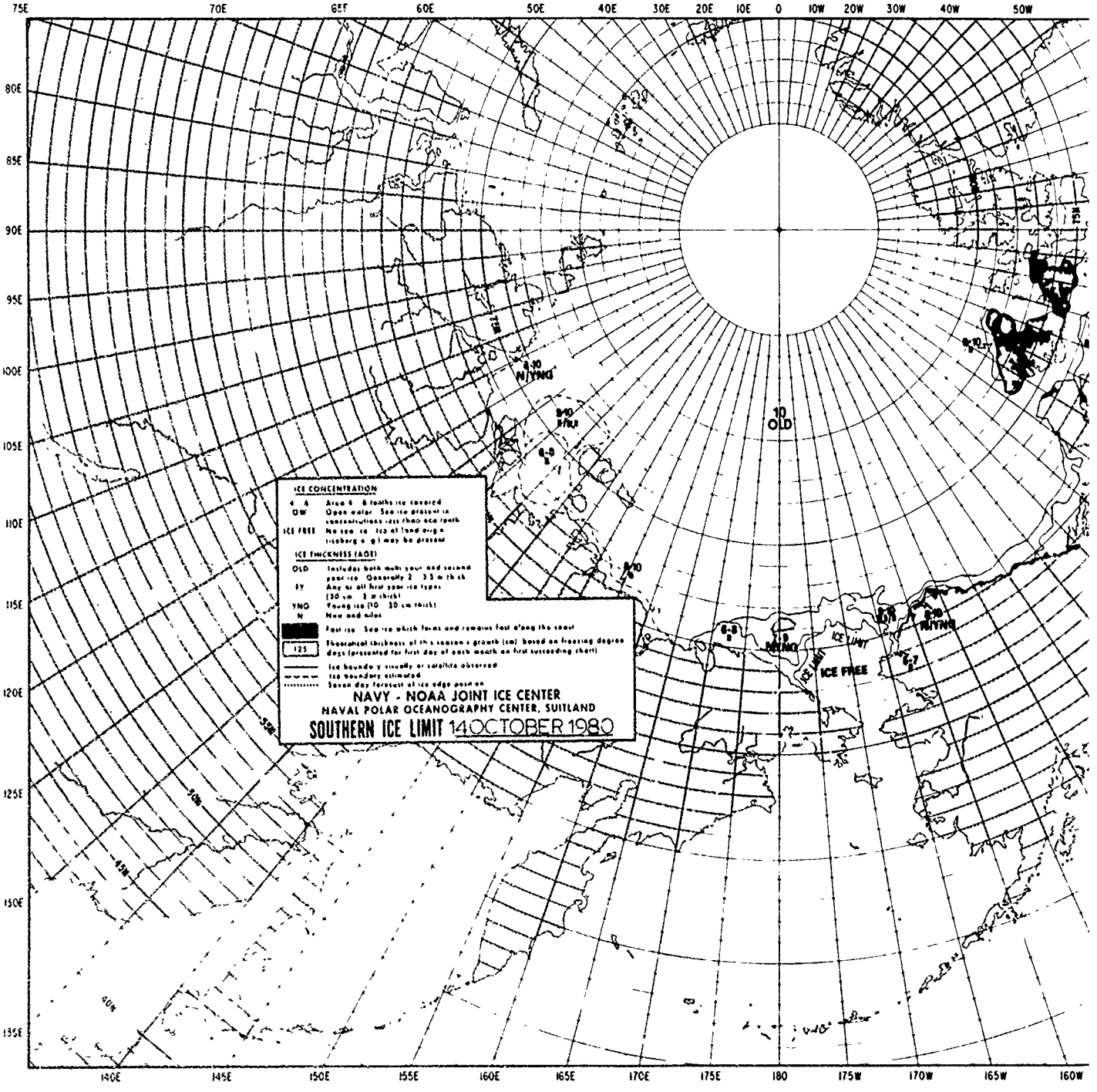
ICE CONCENTRATION
4 - 6 Area 4 - 6 tenths ice covered
OW Open water. Sea ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (iceberg e.g.) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice. Generally 2 - 3.5 - thick
FY Any or all first year ice types (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 30 SEPT 1980
O/W
10 OLD
ICE FREE
ICE FREE
ICE FREE
ICE LIMIT
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W

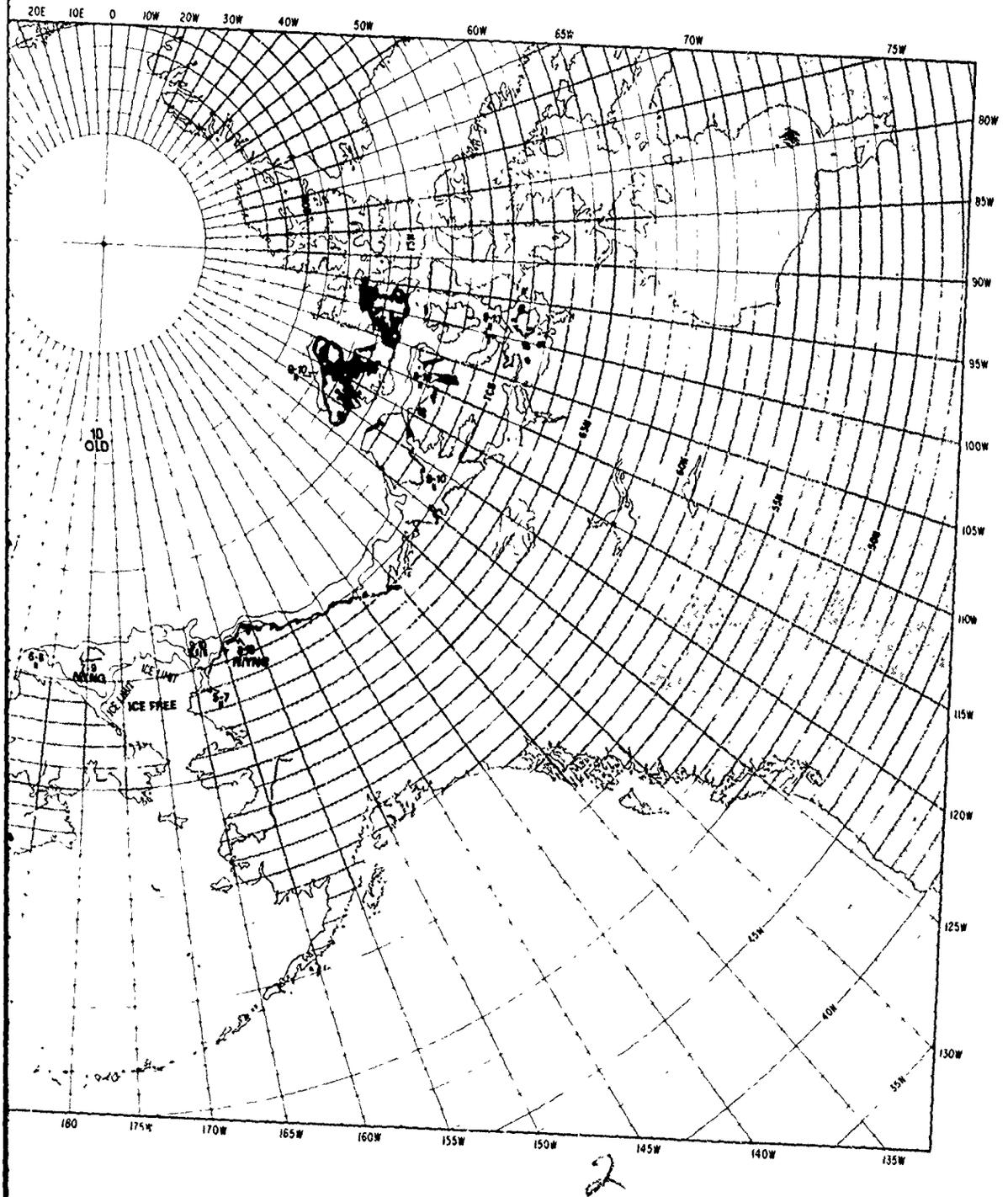

20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
ICE FREE
ICE FREE
ICE FREE


ICE CONCENTRATION
OW Open water. Sea ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (iceberg e g.) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice. Generally 2 3.5 m thick
FY Any or all first year sea ice types (30 cm 2 m thick)
TNO Young ice (10 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (accounted for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 07 OCTOBER 1980
ICE FREE
ICE FREE
BY CONVENTION ALL FIRST YEAR ICE SURVIVING THE SUMMER MELT BECOMES SECOND YEAR (OLD) ICE ON 1 OCTOBER!
OLD
OIW PTCHS
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W

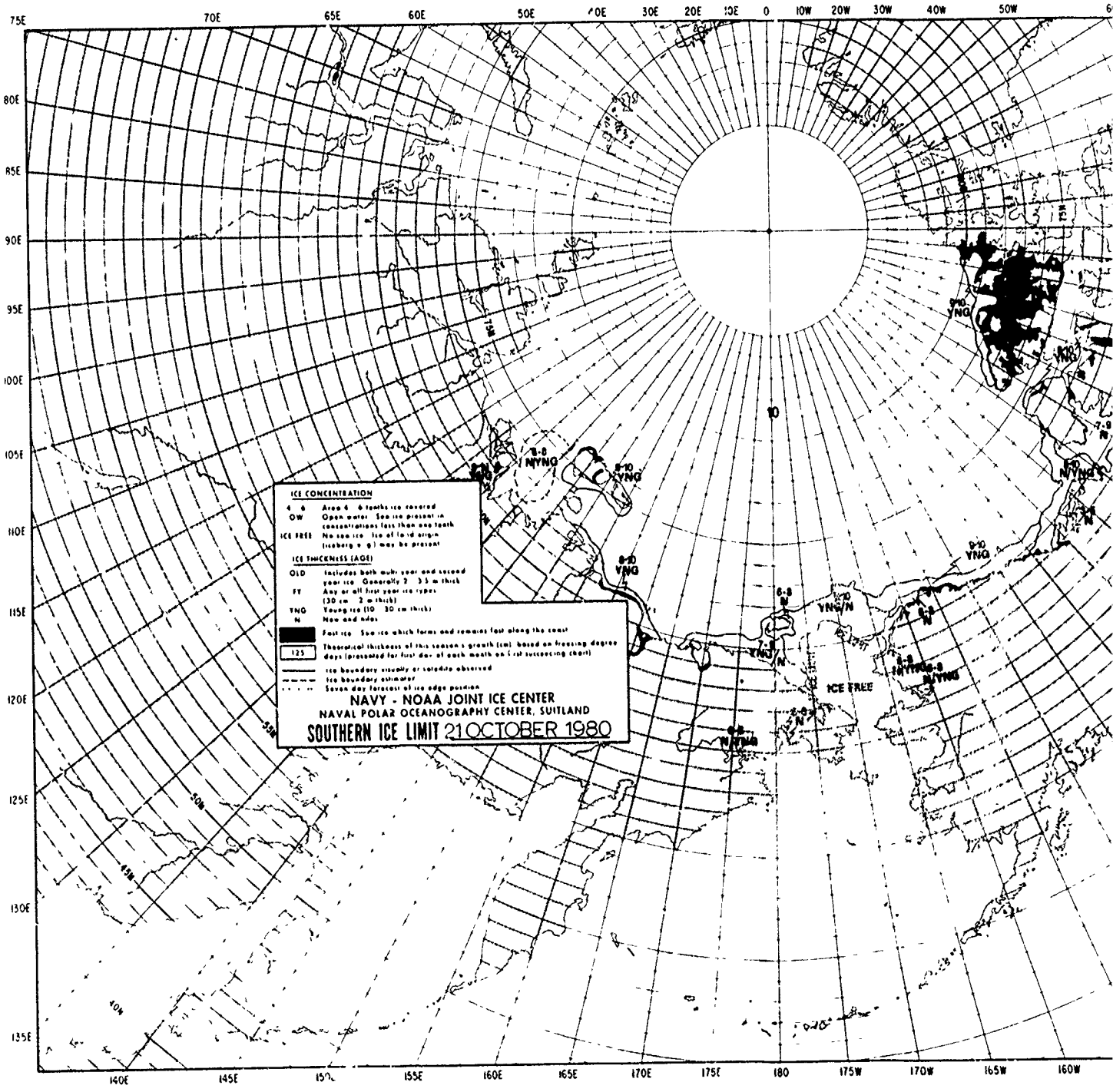

10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
180
175E
ICE FREE
ICE FREE
ALL FIRST YEAR ICE SURVIVING THE SUMMER
SECOND YEAR (OLD) ICE ON 1 OCTOBER

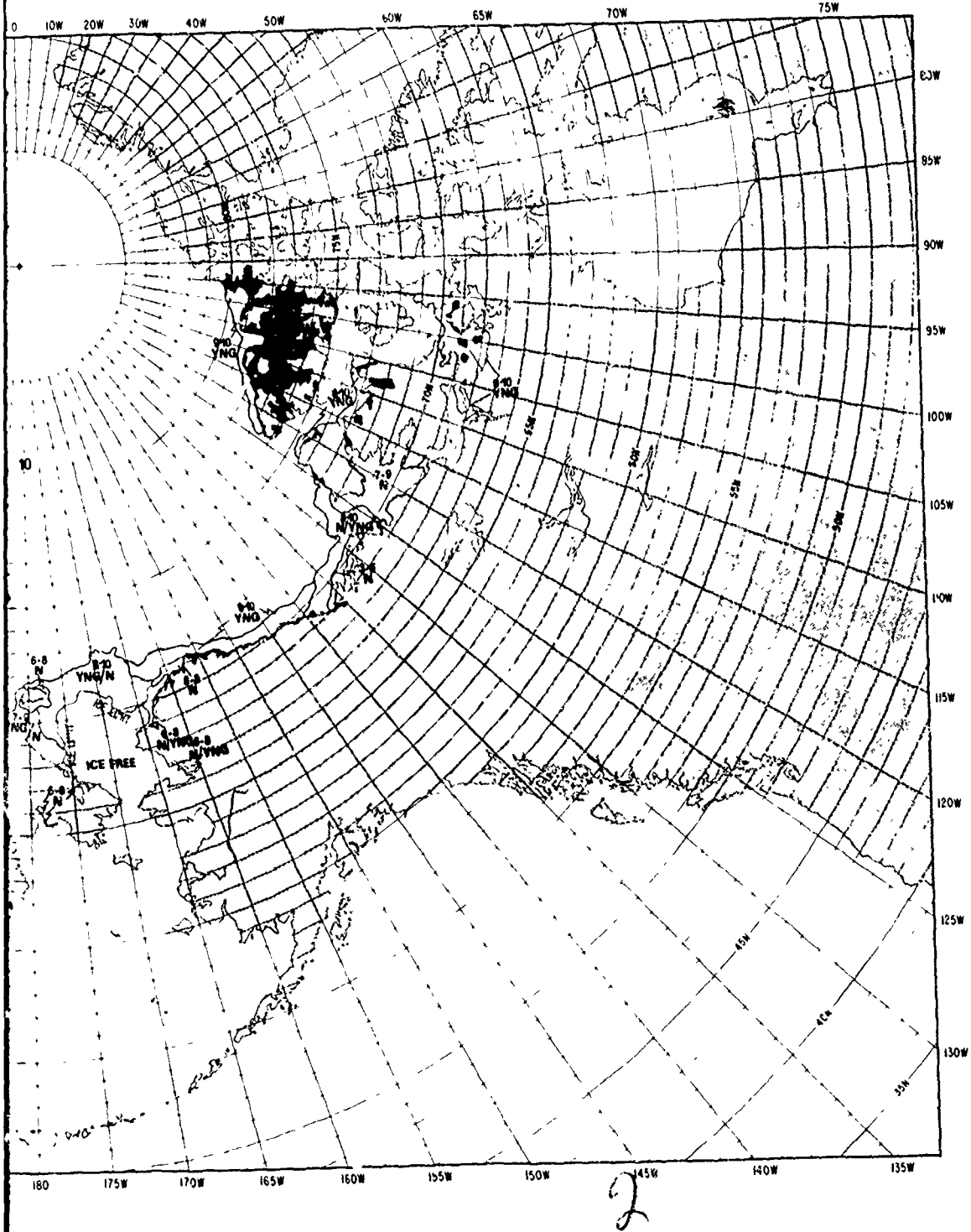
2


75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W
ICE CONCENTRATION
ICE THICKNESS (AGE)
OLD
FY
YNG
N
ICE FREE
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 14 OCTOBER 1980


20E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
180
10 OLD
ICE LIMIT
ICE FREE
45N
40N
35N

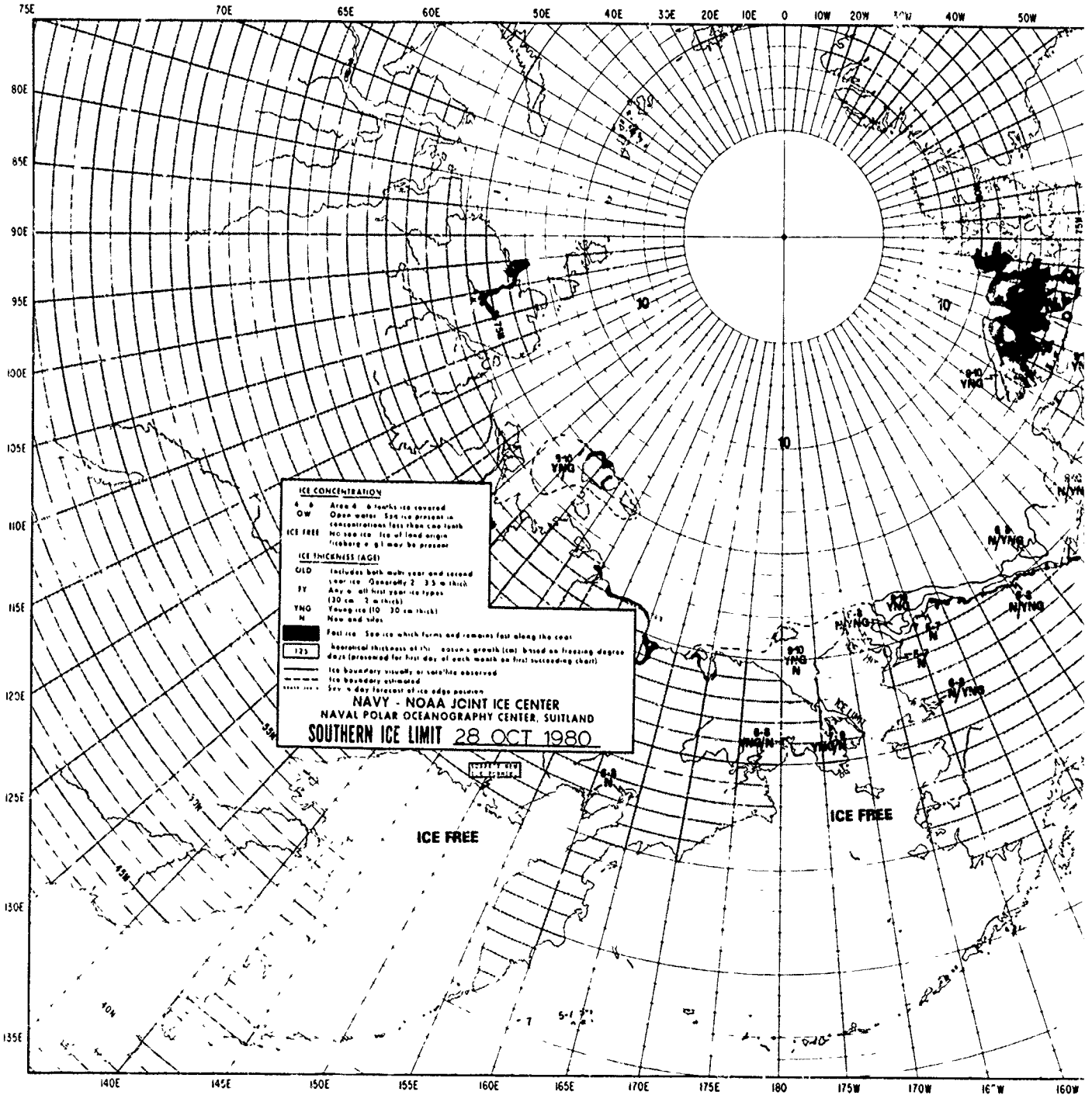
2


ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (processed for first day of each month on 1 of succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 21 OCTOBER 1980
ICE FREE
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150
155E
160E
165E
170E
175E
180
175W
170W
165W
160W

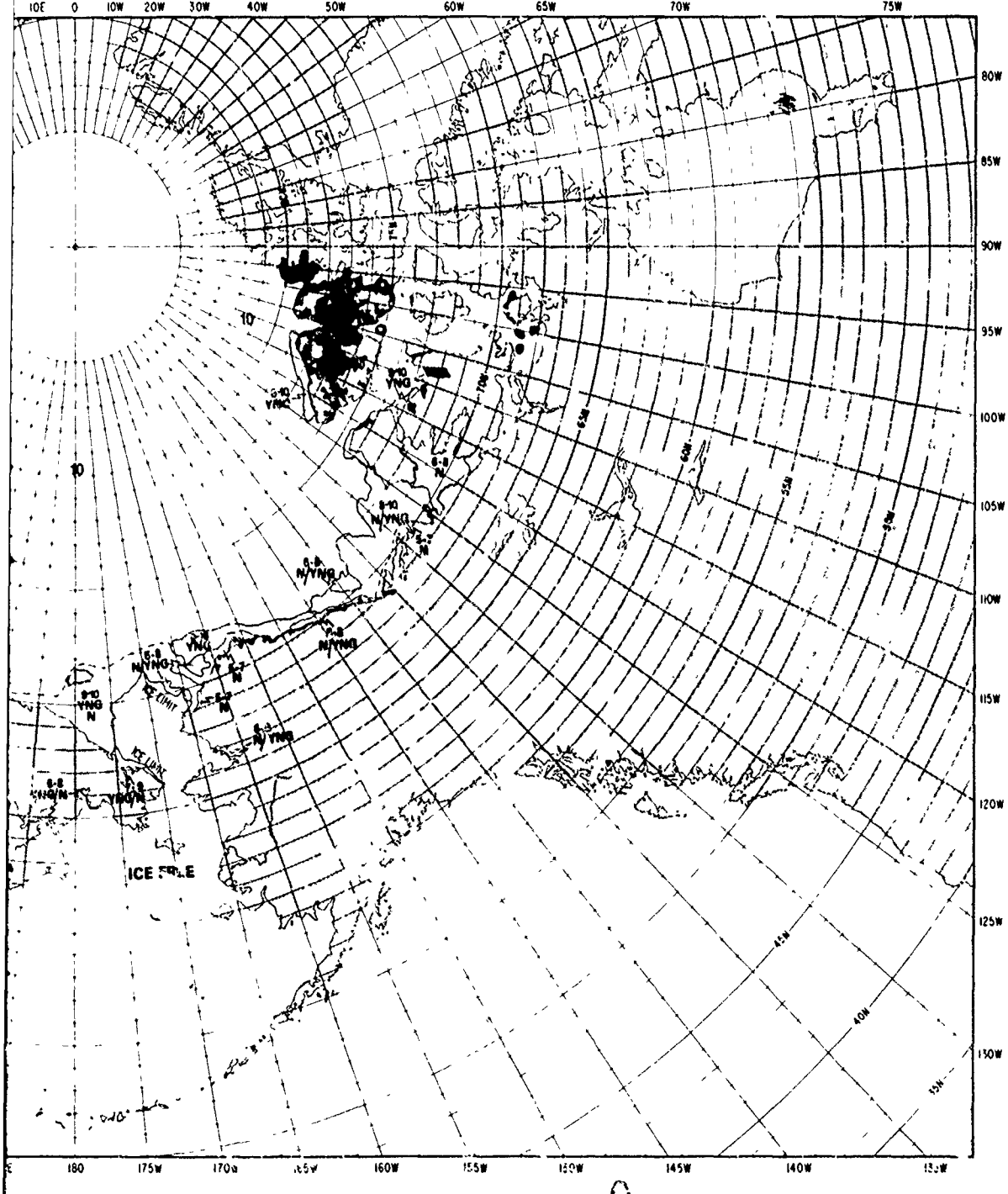


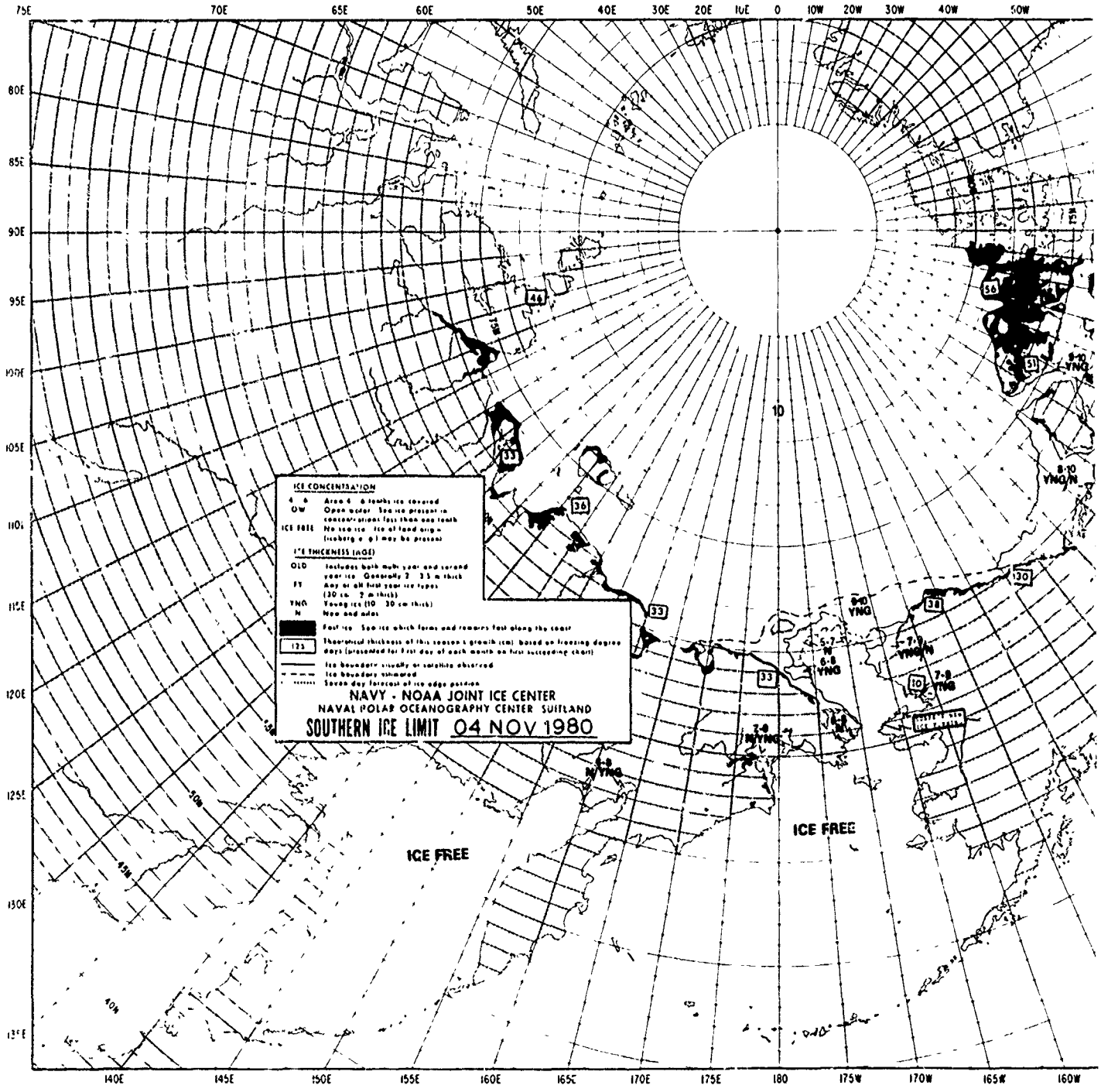
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
180
ICE FREE
YNG
YNG/N
N/YNG

2

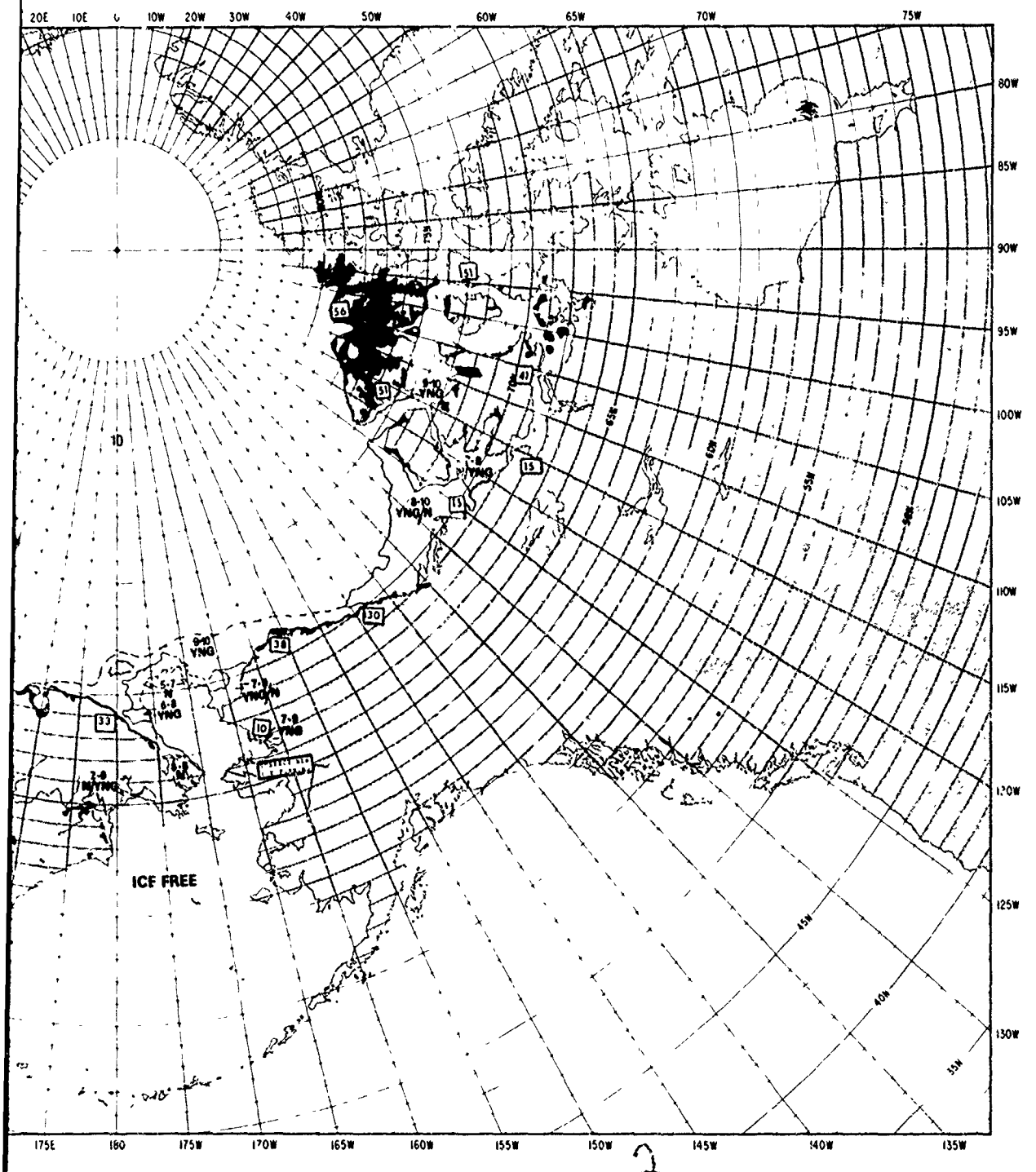


ICE CONCENTRATION
4 - 6 Area 4 - 6 tenths ice covered
OW Open water. Sea ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (iceberg e.g.) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice. Generally 2 - 3.5 m thick
FY Any or all first year ice types (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 28 OCT 1980
ICE FREE
ICE FREE

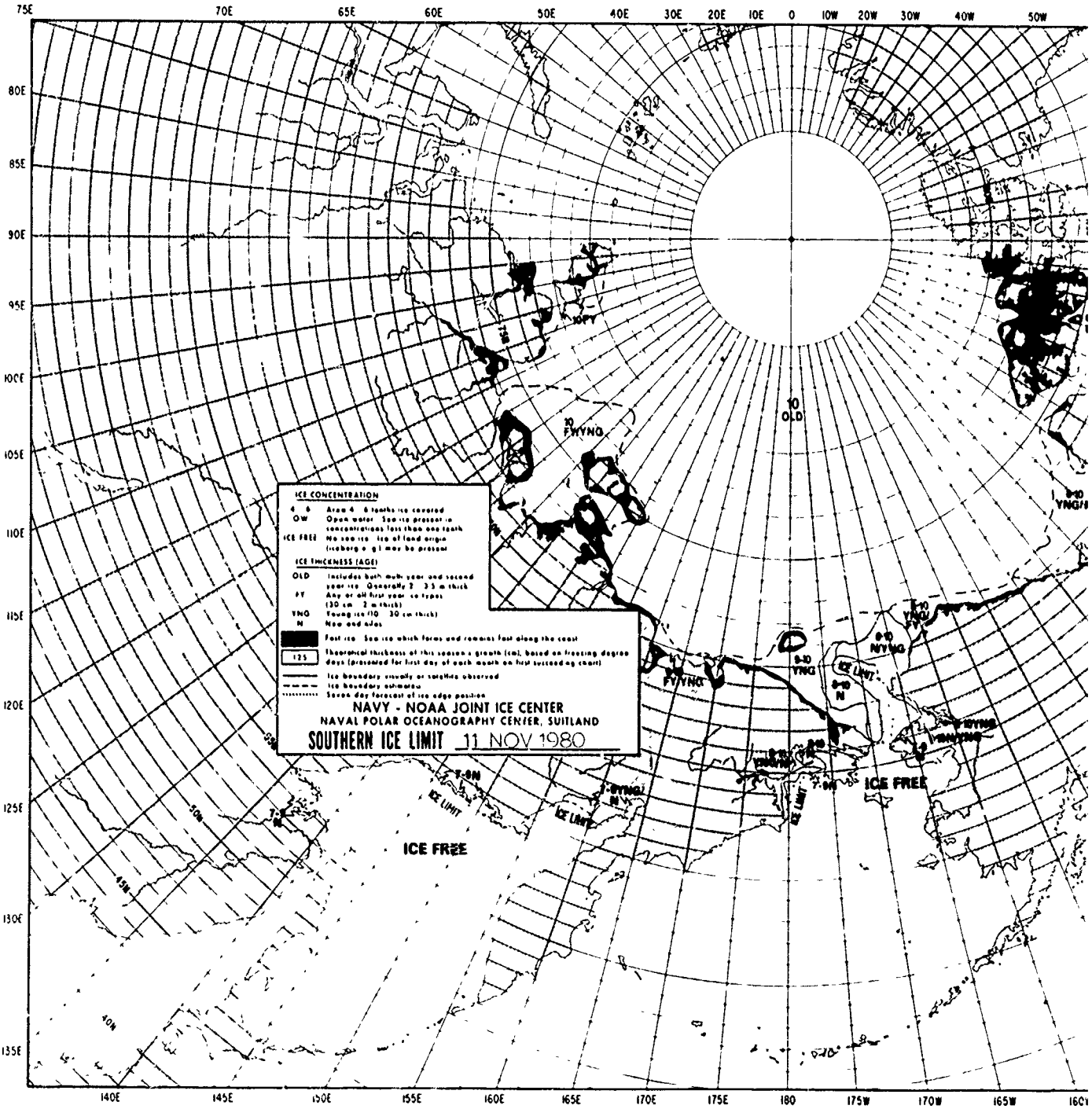

10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
180
10
10
ICE EDGE
ICE LIMIT
ICE LIMIT
8-10 YNG N
8-10 YNG
8-8 N/YNG
8-8 N/YNG
8-8 N/YNG
8-8 N/YNG
8-8 N/YNG
8-8 N/YNG
8-8 YNG/N
8-8 YNG/N
8-8 YNG/N

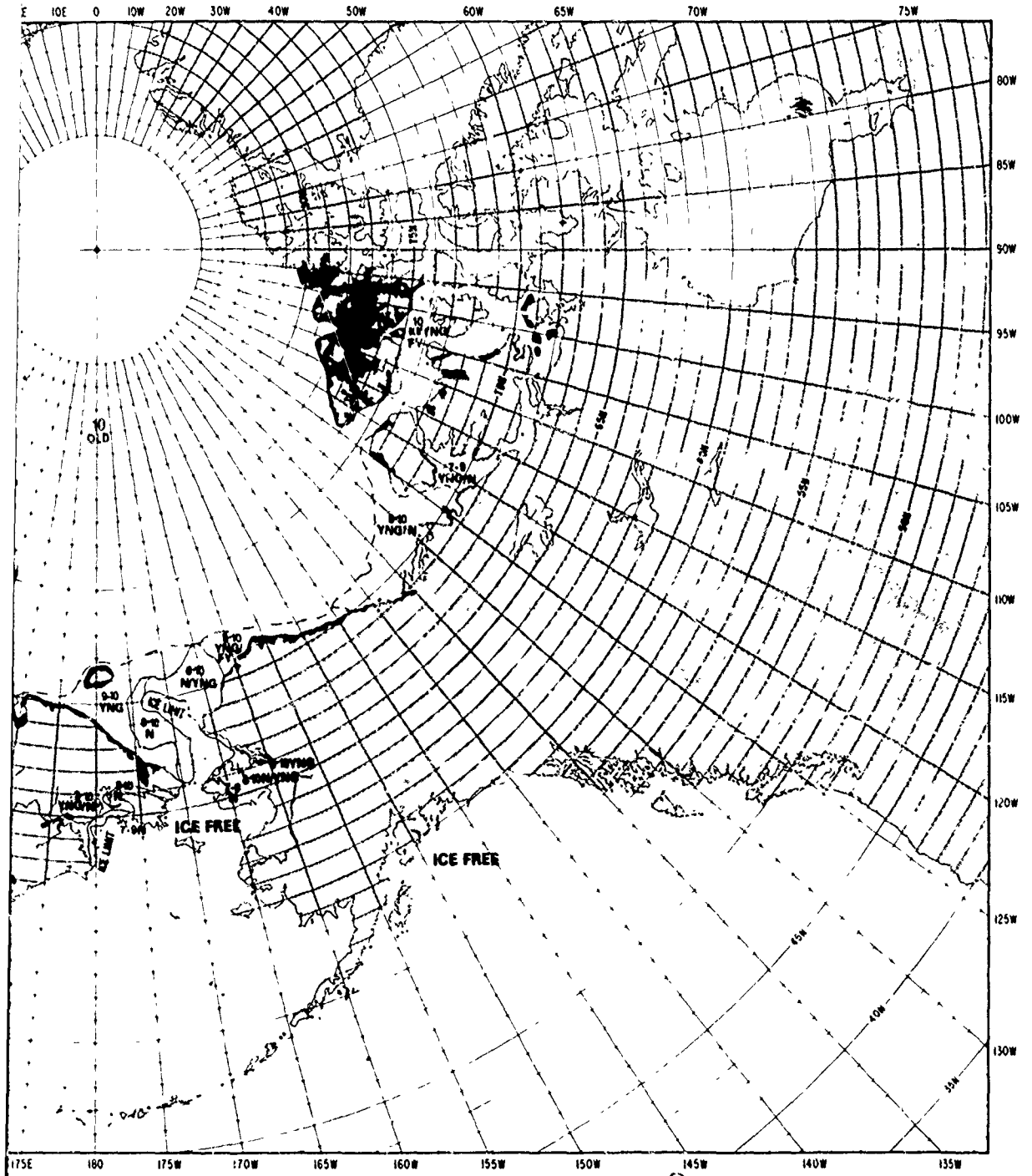


ICE CONCENTRATION
4 - 6 Area 4 - 6 tenths ice covered
OW Open water. Sea ice present in concentrations less than one tenth
ICE FREE No sea ice. Ice of land origin (iceberg e.g.) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice. Generally 2 - 3.5 m thick
FY Any or all first year ice types (30 cm - 2 m thick)
YNG Young ice (10 - 30 cm thick)
N New and nilas
Fast ice. Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 04 NOV 1980
ICE FREE
ICE FREE


20E
10E
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
175E
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
ICE FREE
9-10 YNG
8-10 YNG/N
7-9 YNG
6-8 YNG
5-7 N
7-9 N/YNG
56
51
41
15
13
30
38
33
10

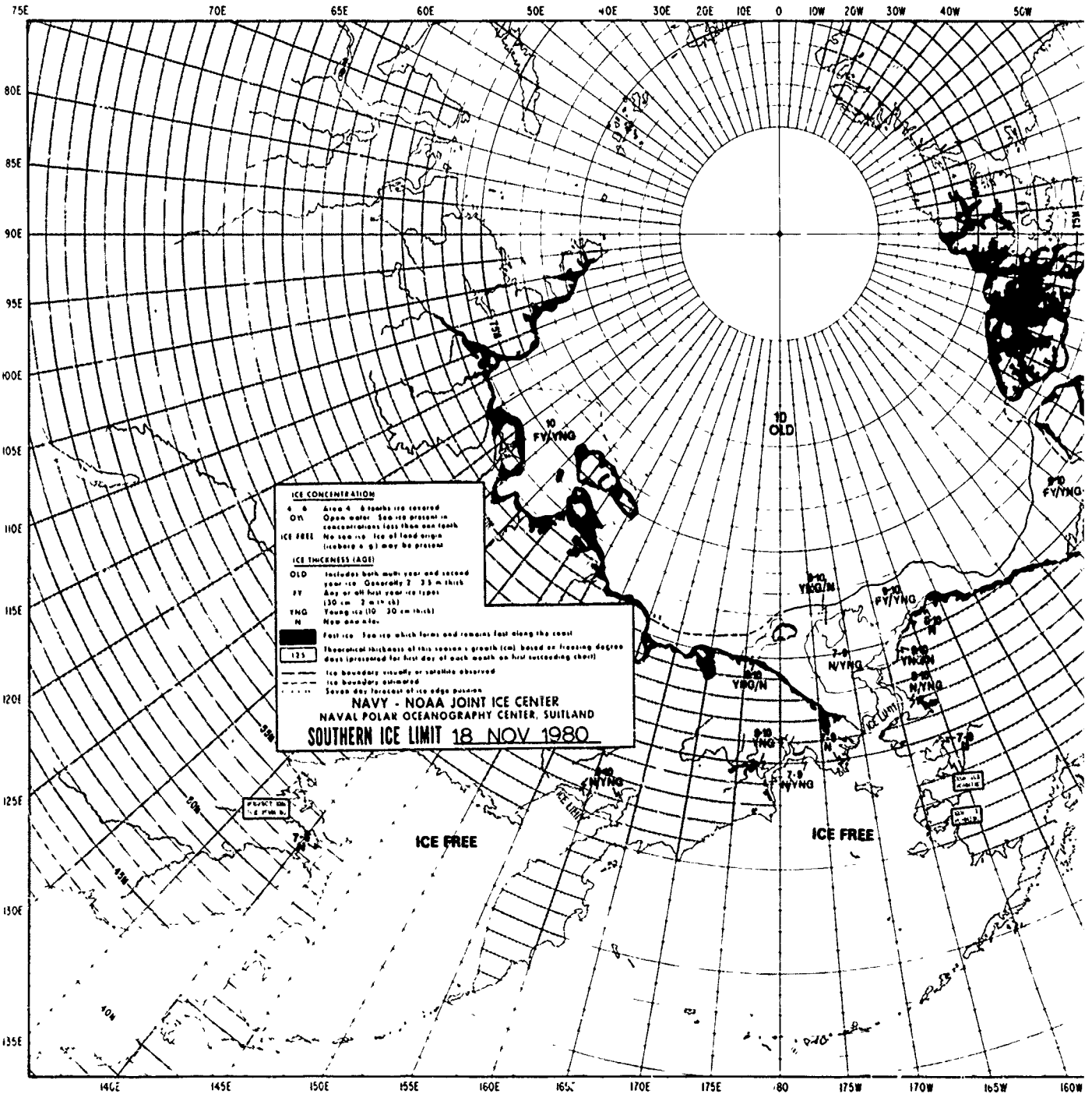
2


ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or old first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (processed for first day of each month on first succeeding count)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 11 NOV 1980
ICE FREE
ICE FREE
ICE LIMIT
ICE LIMIT
ICE LIMIT
ICE LIMIT
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W



10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
175E
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10 OLD
ICE FREE
ICE FREE

2



ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 18 NOV 1980
ICE FREE
ICE FREE
10 OLD
10 FY/YNG
9-10 FY/YNG
9-10 YNG/N
7-9 N/YNG
9-10 YNG/N
9-10 YNG
7-9 N/YNG
9-10 N/YNG
ICE LIMIT
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
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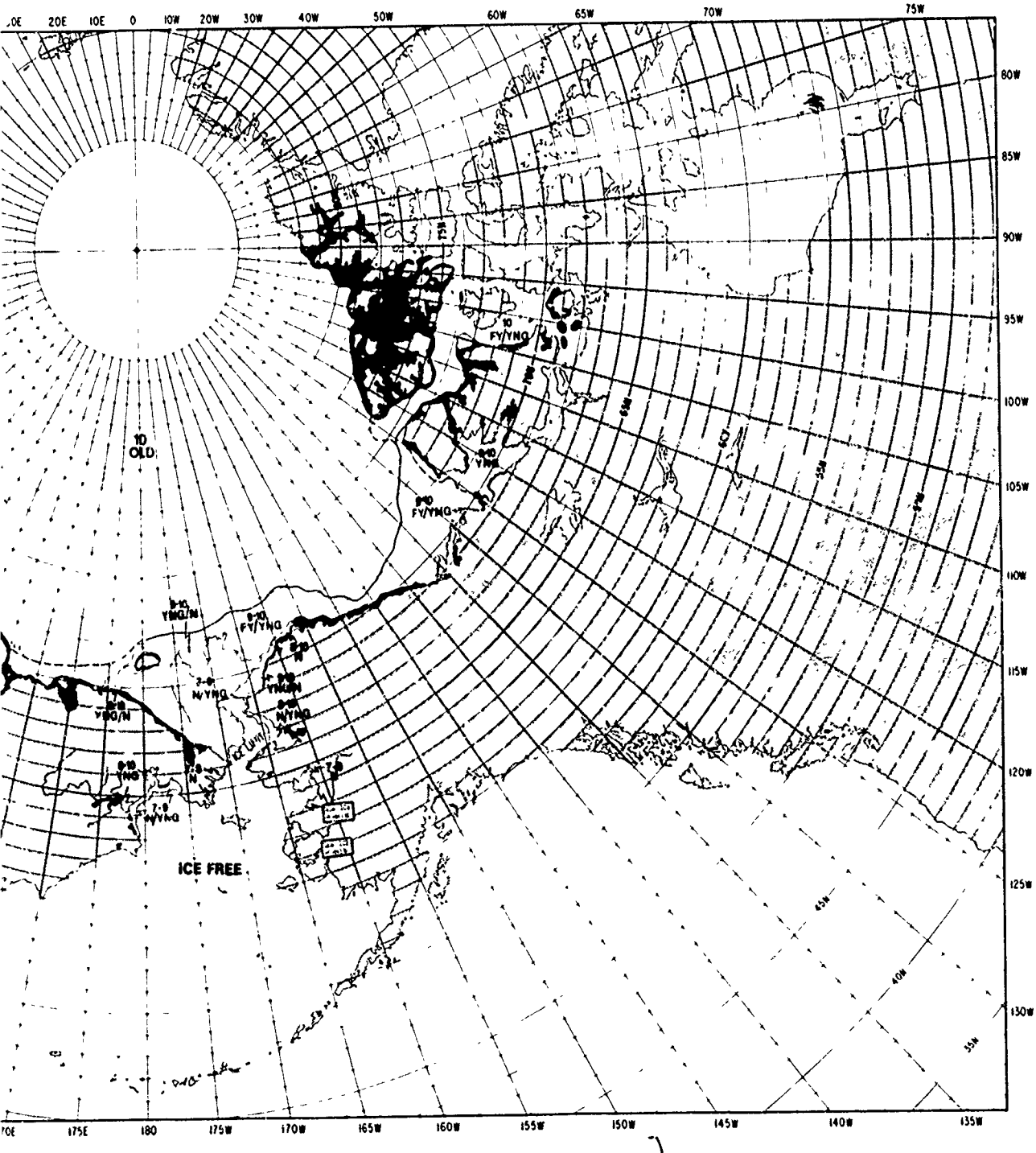
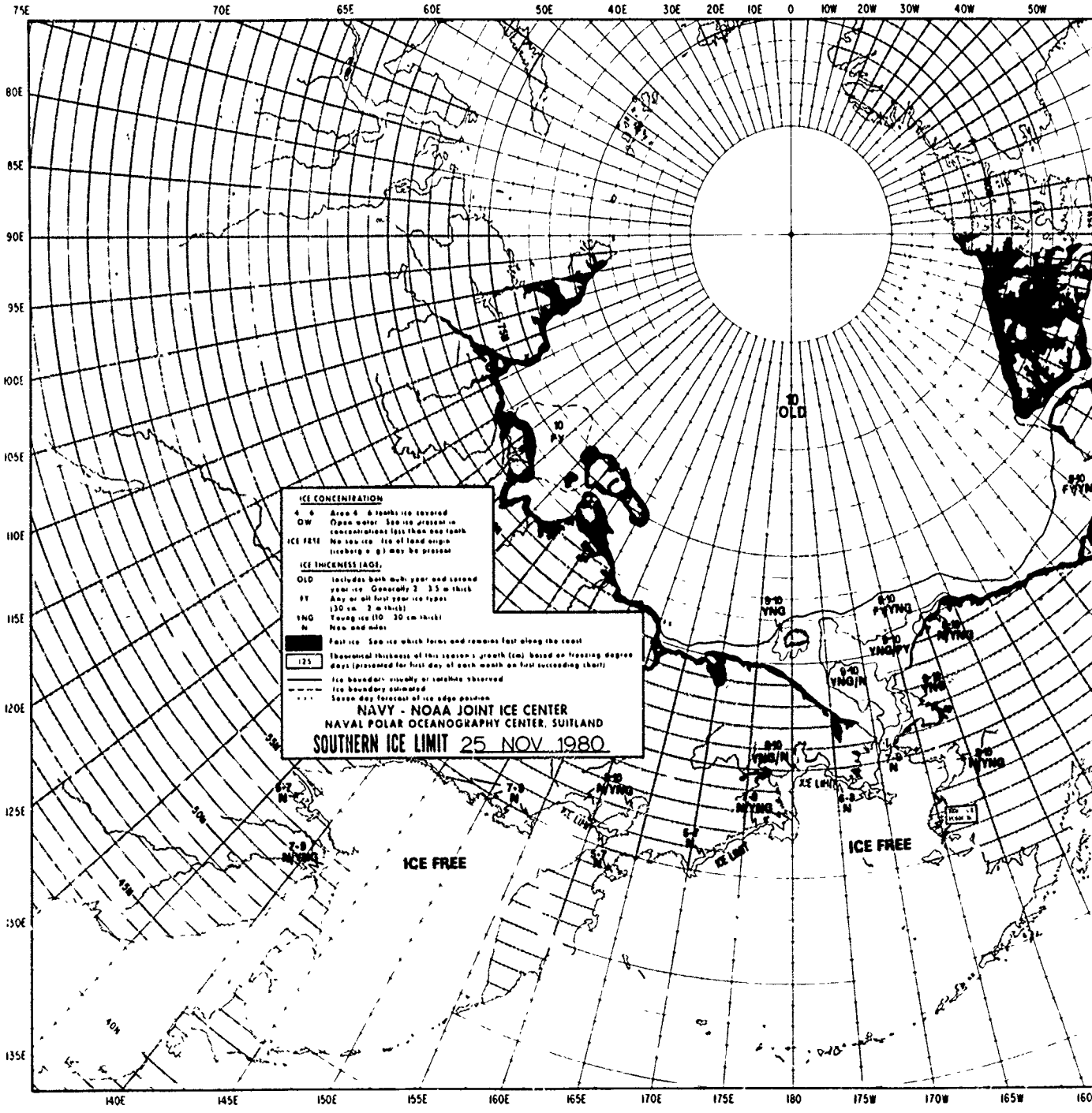
165E
170E
175E
180
175W
170W
165W
160W



20E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
175E
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10 OLD
10 FY/YNG
9-10 FY/YNG
9-10 YNG/N
9-10 FY/YNG
7-9 N/YNG
9-10 YNG/N
9-10 YNG
7-9 N/YNG
ICE FREE

2


ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
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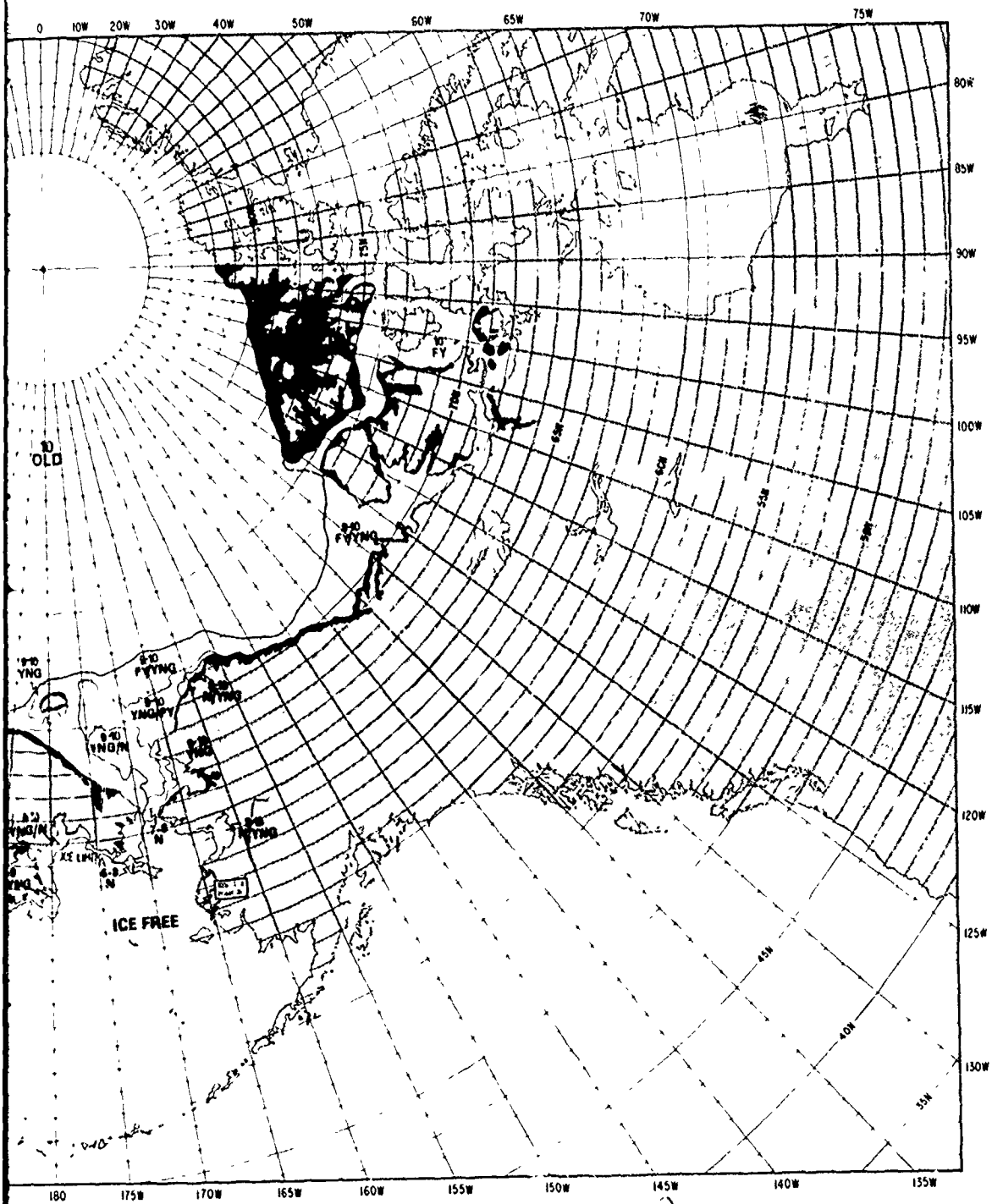
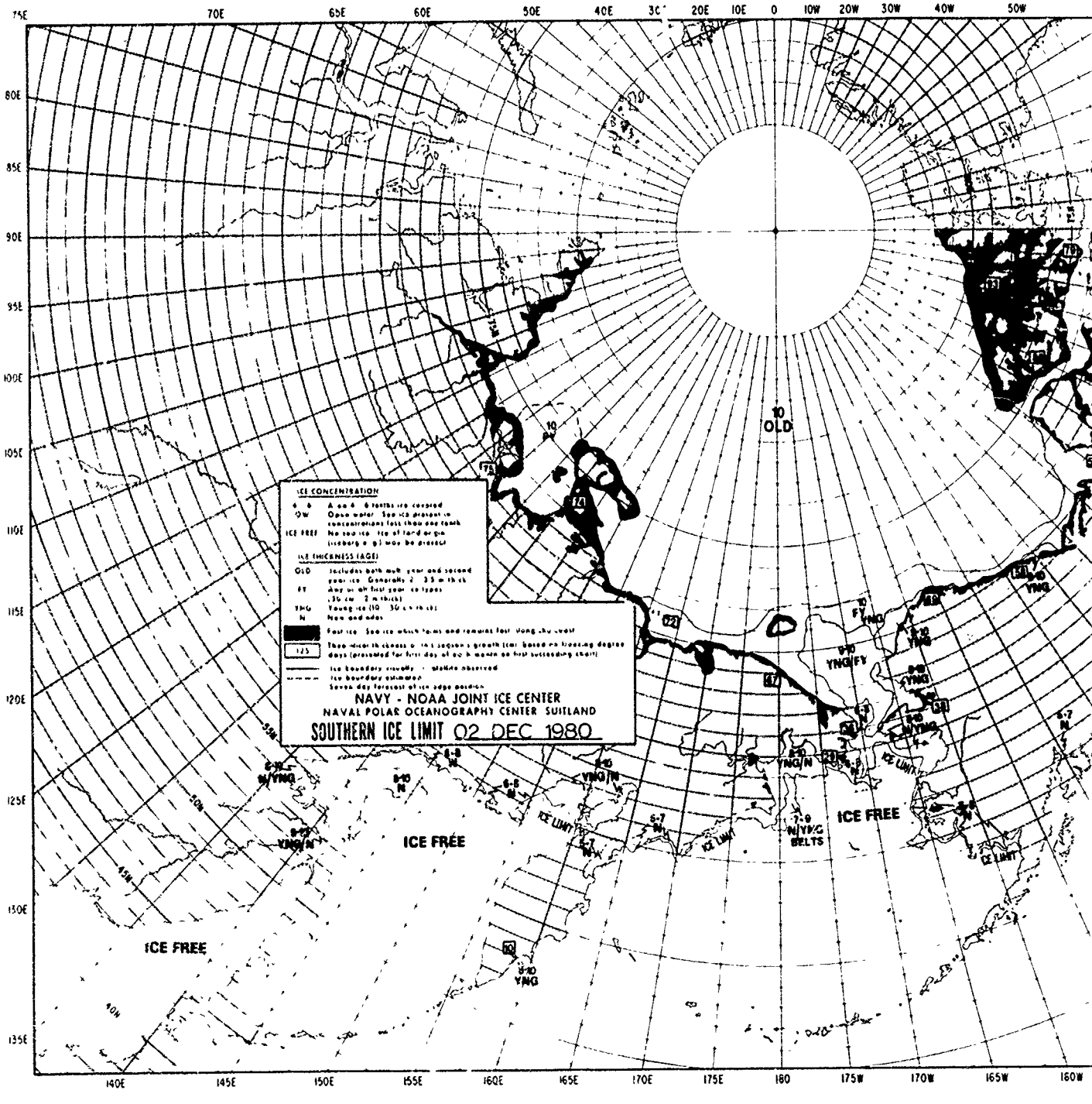
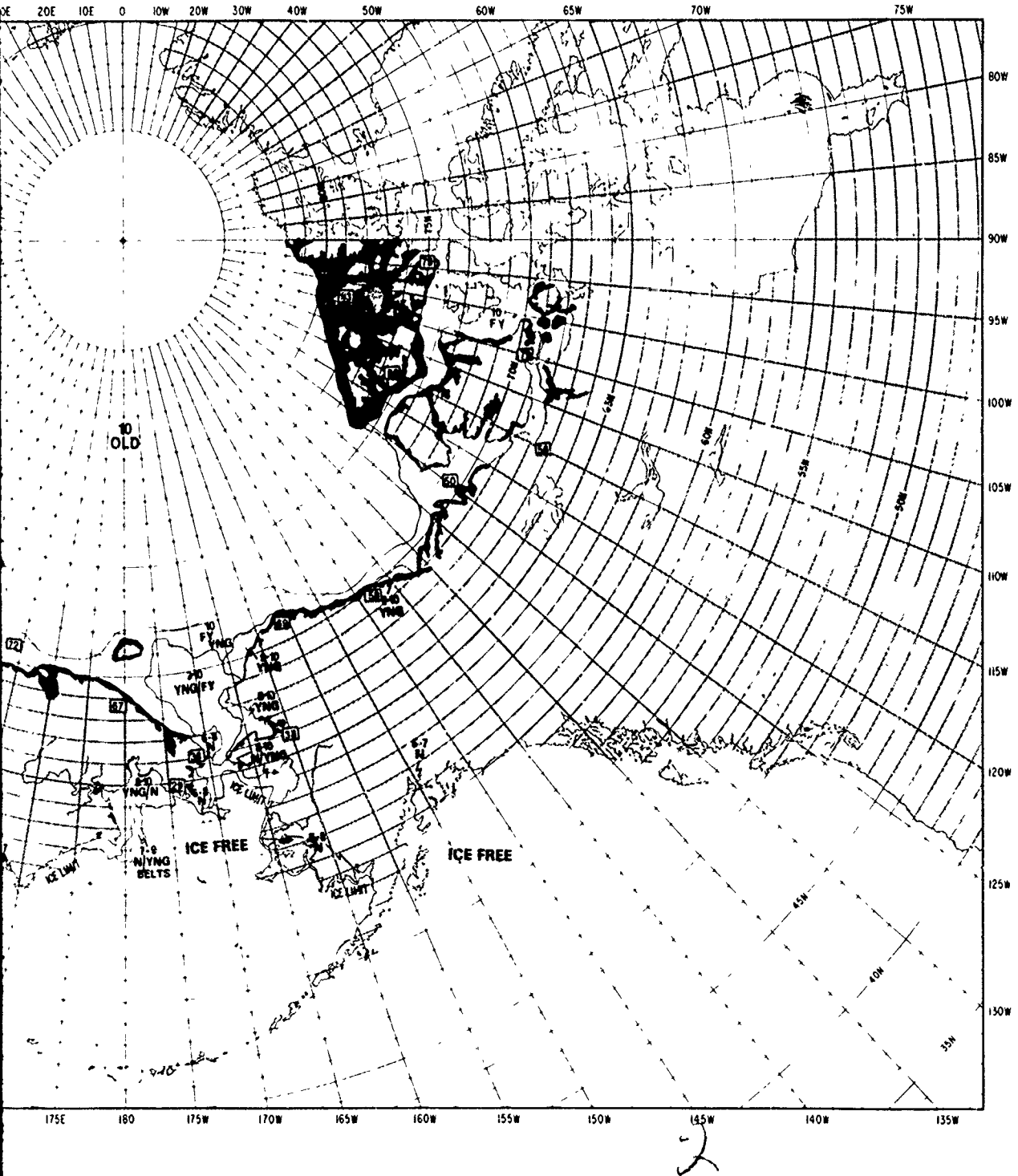
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice Sea ice which forms and remains fast along the coast
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 25 NOV 1980
ICE FREE
ICE FREE
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W


0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
180
OLD
FY
FYYNG
YNG
YNG/FY
YNG/N
ICE FREE

2


NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 02 DEC 1980
ICE FREE
ICE FREE
ICE FREE
OLD
ICE LIMIT


ICE FREE
ICE FREE
10 OLD
10 FY
10 FY YNG
2-10 YNG/FY
8-10 YNG
8-10 YNG/N
7-9 N/YNG BELTS
ICE LIMIT
ICE LIMIT
ICE LIMIT
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
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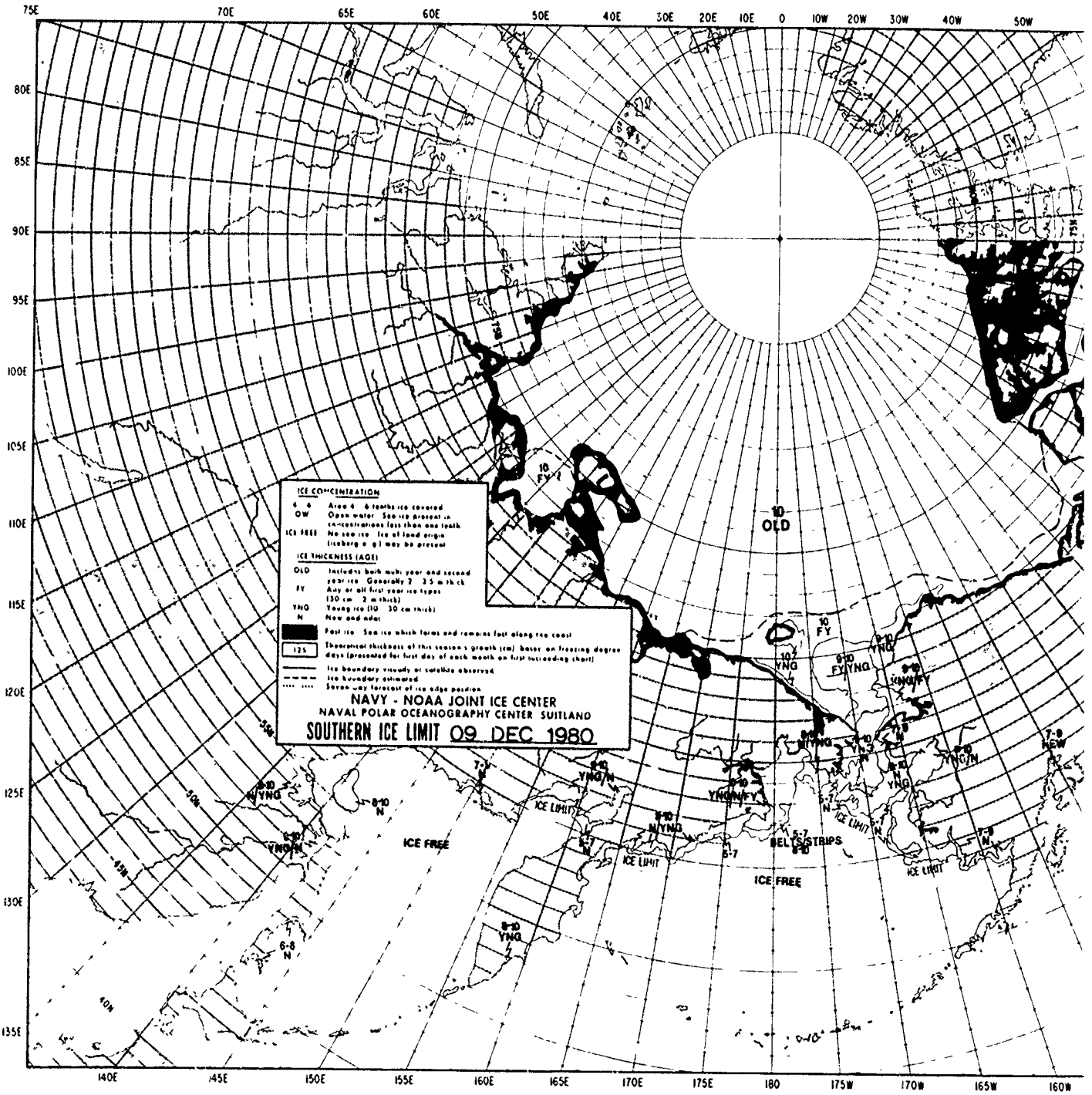
160W
165W
170W
175W
180
175E
70W
75W



ICE CONCENTRATION
4 6 Area 4 6 tenths ice covered
OW Open water Sea ice present in concentrations less than one tenth
ICE FREE No sea ice Ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
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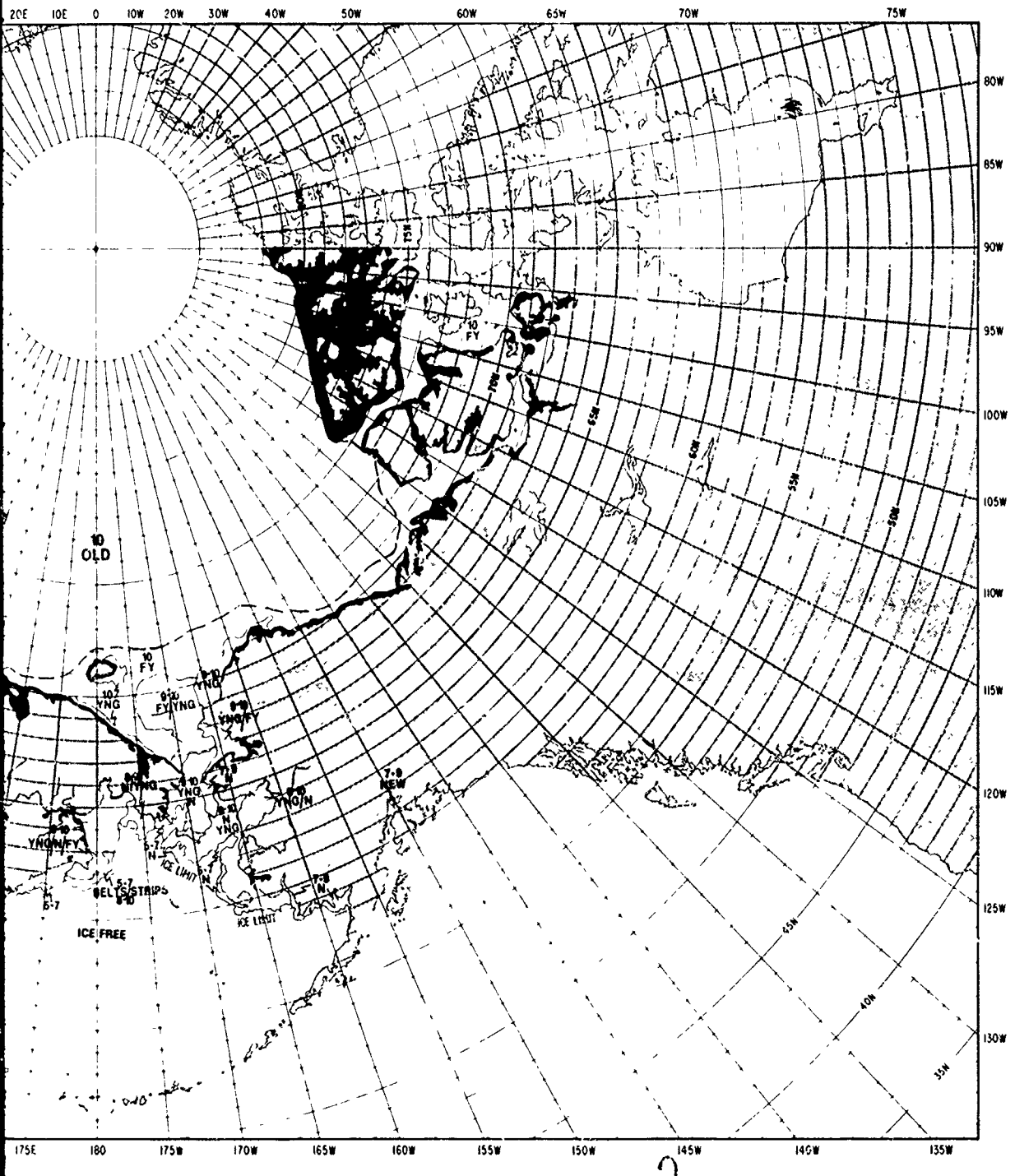
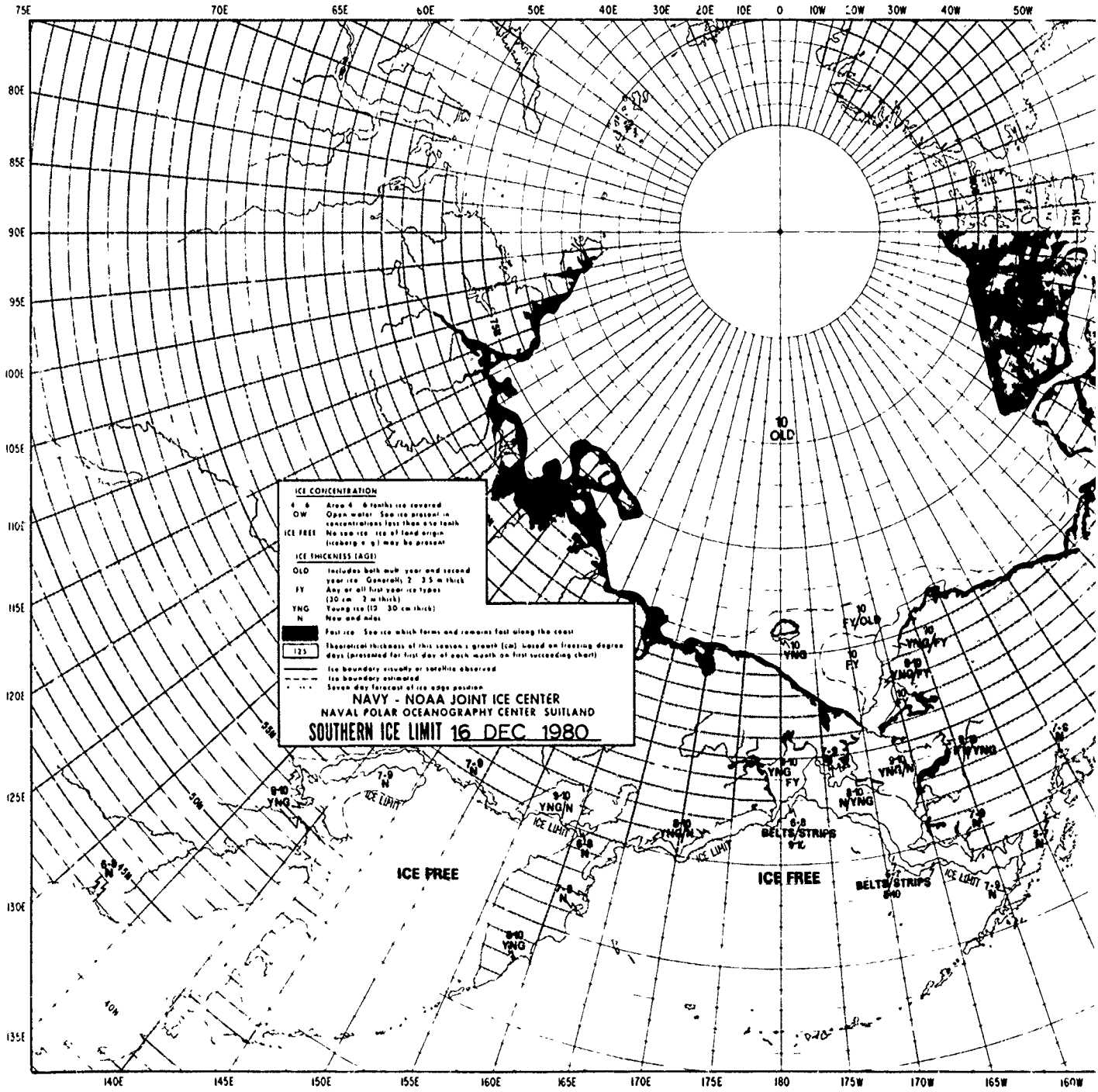
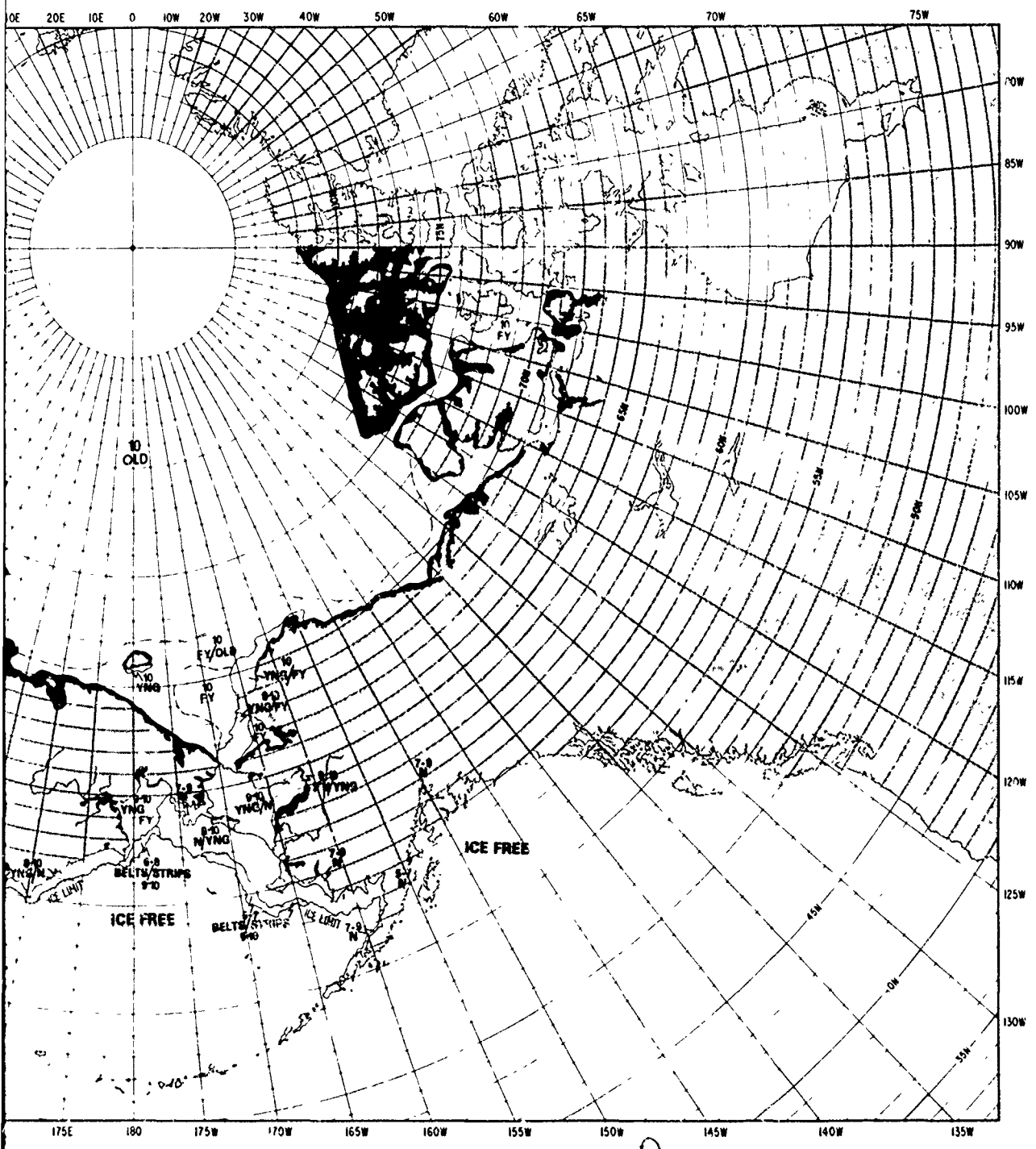
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilac
Fast ice Sea ice which forms and remains fast along the coast
125 Theoretical thickness of this season's growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 09 DEC 1980
ICE FREE
ICE LIMIT
BELTS/STRIPS
10 OLD
10 FY


20E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
175E
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10 OLD
10 FY
10 YNG
9-10 FY/YNG
9-10 YNG
9-10 YNG/FY
9-10 YNG/N
7-9 NEW
9-10 YNG/N/FY
5-7 BELTS/STRIPS
ICE FREE
ICE LIMIT
ICE LIMIT
75N
70N
65N
60N
55N
50N
45N
40N
35N

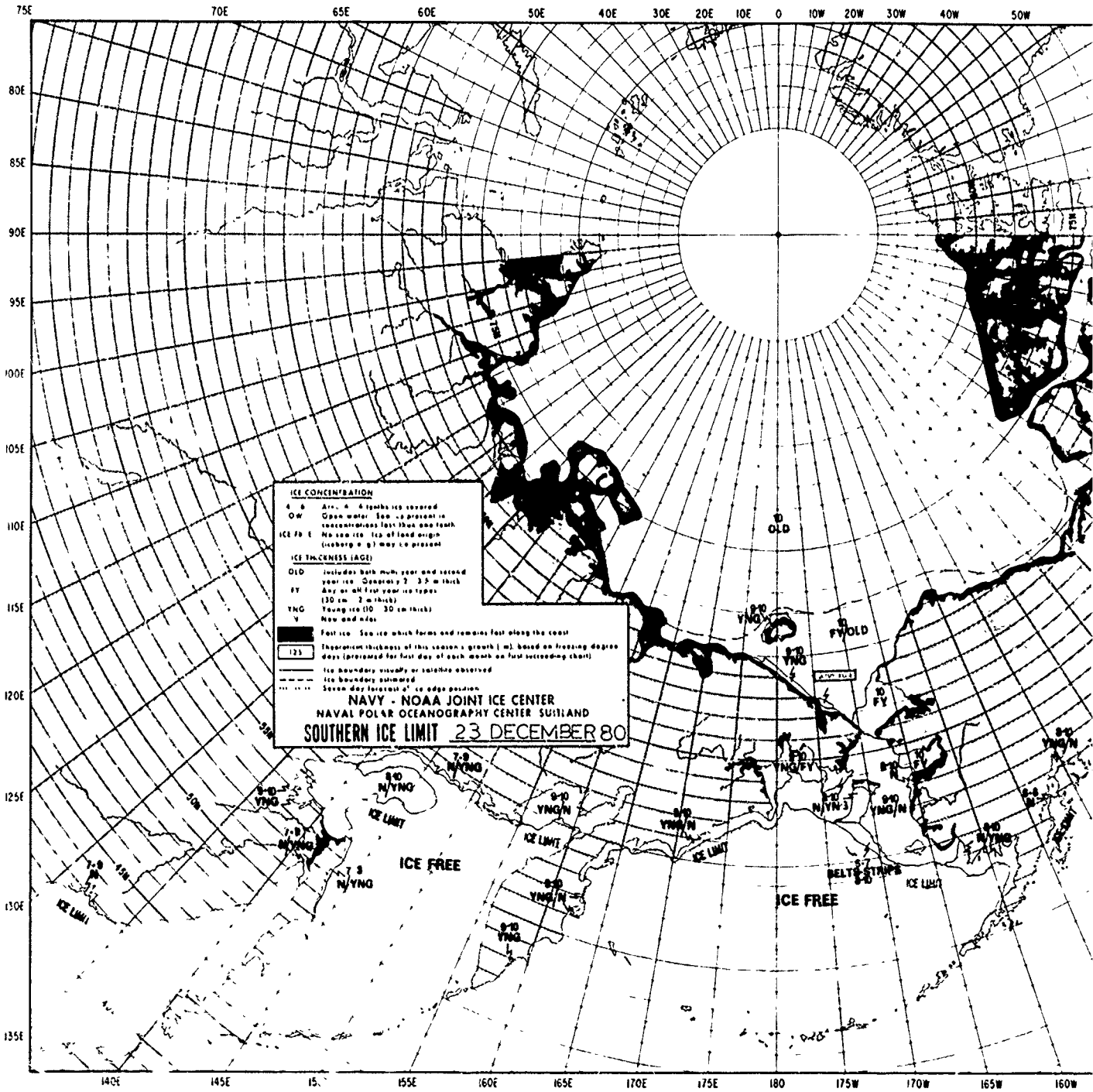
2


ICE CONCENTRATION
10 Area 10 tenths ice covered
OW Open water See ice present in concentrations less than one tenth
ICE FREE No sea ice ice of land origin (iceberg e g) may be present
ICE THICKNESS (AGE)
OLD Includes both multi year and second year ice Generally 2 3 5 m thick
FY Any or all first year ice types (30 cm 2 m thick)
YNG Young ice (10 30 cm thick)
N New and nilas
Fast ice See ice which forms and remains fast along the coast
125 Theoretical thickness of this season s growth (cm) based on freezing degree days (presented for first day of each month on first succeeding chart)
Ice boundary visually or satellite observed
Ice boundary estimated
Seven day forecast of ice edge position
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 16 DEC 1980
ICE FREE
ICE FREE
ICE LIMIT
BELTS/STRIPS
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
135E
140E
145E
150E
155E
160E
165E
170E
175E
180
175W
170W
165W
160W

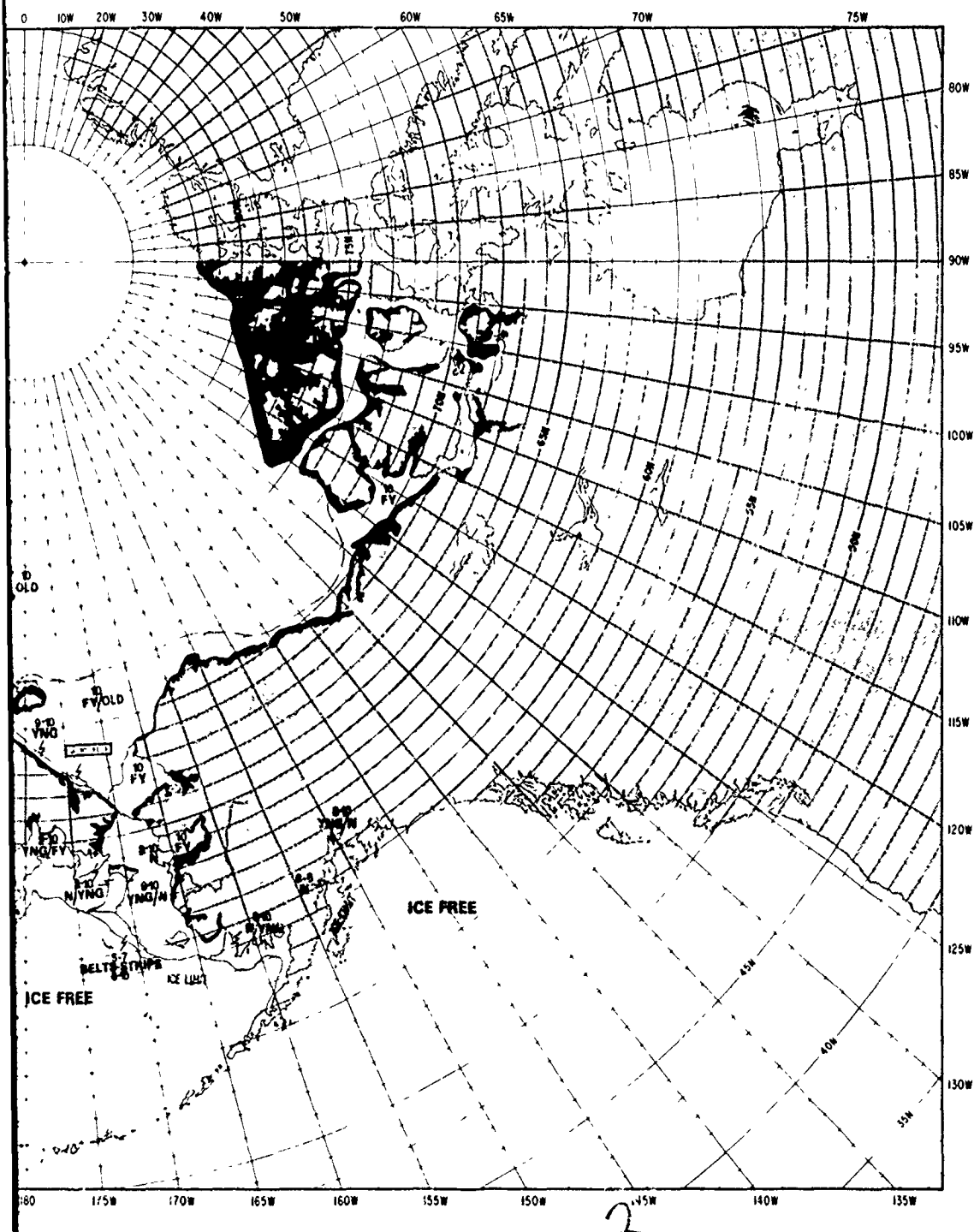


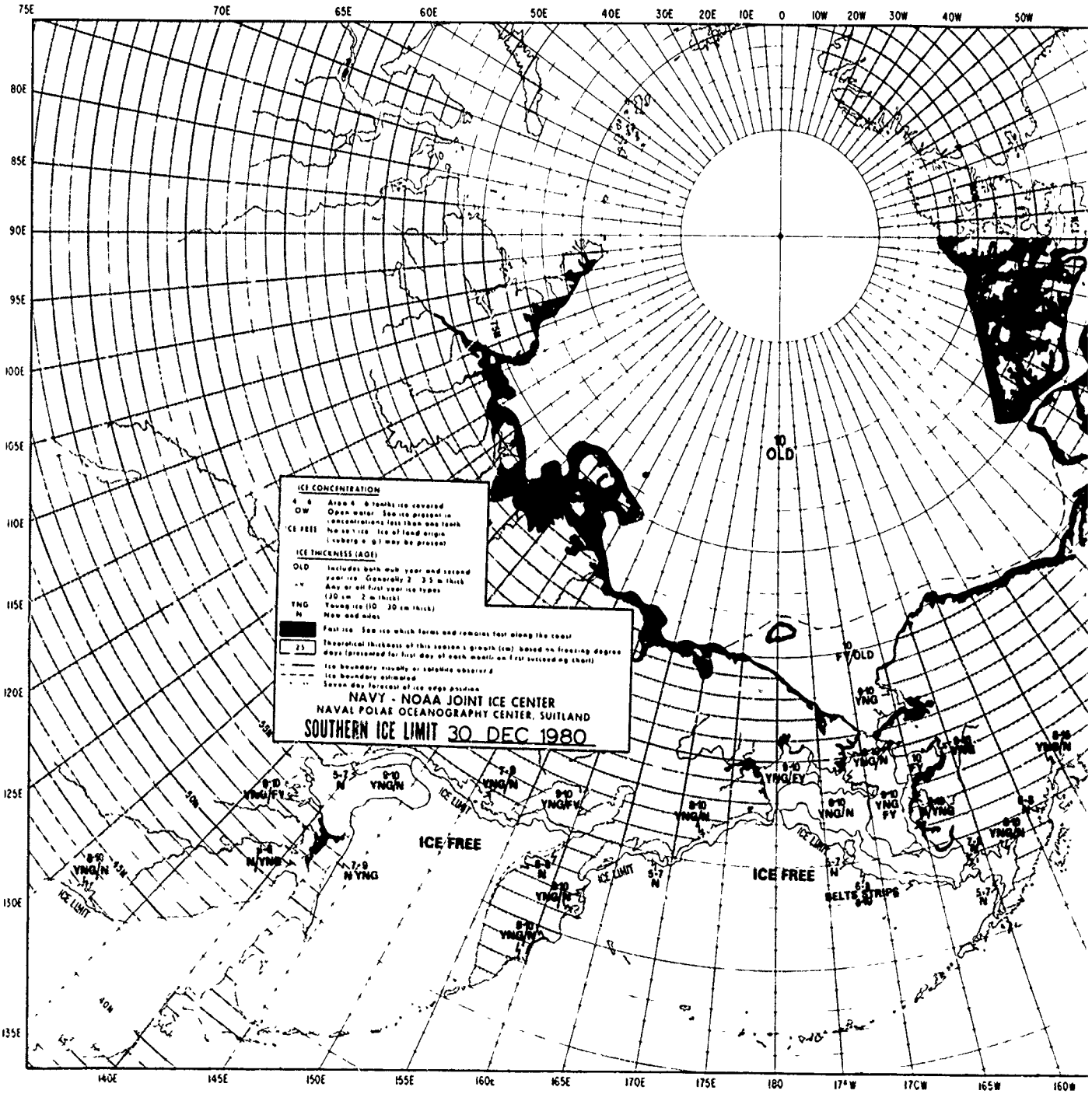
10E
20E
10E
0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
175E
180
175W
170W
165W
160W
155W
150W
145W
140W
135W
10 OLD
10 FY
10 FY/OLD
10 YNG
10 YNG/FY
9-10 YNG/FY
9-10 YNG/N
9-10 N/YNG
9-10 YNG FY
8-10 YNG/N
6-8 BELTS/STRIPS 9-10
ICE LIMIT
ICE FREE
ICE FREE
BELTS/STRIPS
ICE LIMIT
7-9 N

2



ICE CONCENTRATION
OW Open water
ICE THICKNESS (AGE)
OLD
FY
YNG
Fast ice
Ice boundary visually or satellite observed
Ice boundary estimated
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER SUITLAND
SOUTHERN ICE LIMIT 23 DECEMBER 80
ICE FREE
ICE LIMIT
BELTS-STRIPS


0
10W
20W
30W
40W
50W
60W
65W
70W
75W
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W
135W
140W
145W
150W
155W
160W
165W
170W
175W
180
ICE FREE
ICE FREE
10 OLD
10 FY/OLD
9-10 YNG
10 FY
9-10 YNG/FY
9-10 N/YNG
9-10 YNG/N
9-10 N/YNG
9-10 YNG/N
9-10 N/YNG
9-10 FY
9-10 FY
9-10 FY


ICE CONCENTRATION
OW Open water
ICE FREE
ICE THICKNESS (AOE)
OLD
YNG
N
NAVY - NOAA JOINT ICE CENTER
NAVAL POLAR OCEANOGRAPHY CENTER, SUITLAND
SOUTHERN ICE LIMIT 30 DEC 1980
ICE FREE
ICE FREE
ICE LIMIT
10 OLD
10 FY/OLD
75E
70E
65E
60E
50E
40E
30E
20E
10E
0
10W
20W
30W
40W
50W
80E
85E
90E
95E
100E
105E
110E
115E
120E
125E
130E
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155E
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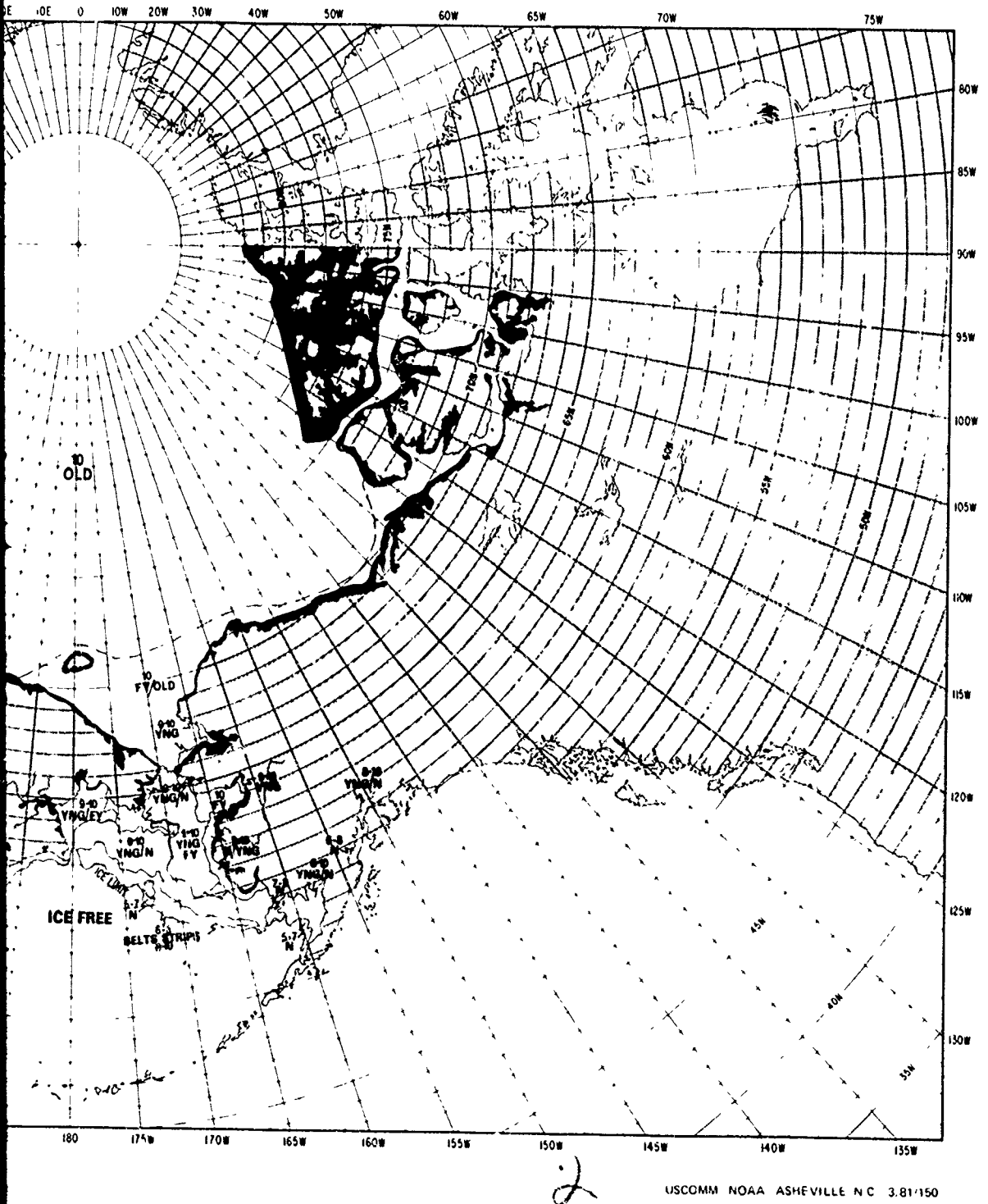
170E
175E
180
170W
165W
160W



USCOMM NOAA ASHEVILLE N C 3.81/150

TABLE I TYPE OF SATELLITE IMAGERY UTILIZED DU

Time Period		Satellite Remote Sensing			Res
From	To	Sensor Platform	Sensor Type	Spectral Region	
1-80	11-80	TIROS-N	AVHRR HRPT/LAC VIS NIR IR	 0.55-0.90um 3.55-3.93um 10.5-11.5um	
			GAC VIS IR	 0.55-0.90um 10.5-11.5um	
1-80	8-80	DMSP	HR MI	0.4-1.1um 8.0-13.0um	3 4
1-80	12-80	NOAA-6	AVHRR HRPT/LAC VIS NIR IR	 0.55-0.68um 3.55-3.93um 10.5-11.5um	
2-80	12-80		GAC VIS IR	 0.55-0.68um 10.5-11.5um	
1-80	12-80	NIMBUS-5	ESMR	1.55cm	2
4-80	12-80	NIMBUS-7	SMMR	1.66cm	5(

Abbreviations and Acronyms

AVHRR - Advanced Very High Resolution Radiometer
cm - Centimeter
DMSP - Defense Meteorological Satellite Program
ESMR - Electrically Scanning Microwave Radiometer
GAC - Global Area Coverage
HR - High Resolution (Visual Scanning Radiometer)
HRPT - High Resolution Picture Transmission
IR - Infrared
km - Kilometer
LAC - Local Area (
MI - High Resolut
NIR - Near Infrare
SMRR - Scanning Mul
VHRR - Very High Re
VIS - Visual
um - Micrometer

ERY UTILIZED DURING 1980

al n	Resolution	Coverage
0um 3um 5um	1km 1km 1km	Regional
0um 5um	4km 4km	Global
m um	3.7km 4.4km	Global
8um 3um 5um	1km 1km 1km	Regional
8um 5um	4km	Global
m	25km	Global
m	50km	Global

- Kilometer
C - Local Area Coverage
- High Resolution (Infrared Scanning Radiometer)
R - Near Infrared
RR - Scanning Multifrequency Microwave Radiometer
RR - Very High Resolution Radiometer
S - Visual
- Micrometer