




16150  
28 Jul 2017

## MEMORANDUM

From:  A. J. Maffia, CDR  
CGD Nine (dpw)

To: COMDT (CG-WWM)  
Thru: CG LANTAREA (LANT-54)

Subj: 2016-2017 NINTH DISTRICT END OF SEASON ICE REPORT

Ref: (a) Domestic Ice Breaking Operations Policy, COMDTINST 16151.1 (series)  
(b) Ninth District Domestic Icebreaking Standard Operating Procedures Manual, D9INST M16150.3 (series)

### 1. Narrative Summary:

a. The 2016-2017 ice season was extremely mild, especially when compared to the historic ice conditions of the 2013-2014 and 2014-2015 ice seasons. Ice development was slightly earlier than the previous year. The commencement of both domestic icebreaking operations began in mid December. The mild weather pattern persisted throughout the winter navigation season with occasional periods of more typical seasonal temperatures, but never for a significant duration to enable measurable ice growth.

b. Ninth District Domestic Icebreaking operations began on 19 December 2016 with the commencement of Operation Taconite. During the 113 days of icebreaking operations, the six USCG cutters assigned to the operation spent a total of 2,343 hours of icebreaking to assist 601 commercial vessels transits; 45 of these transits required direct icebreaking assistance, which supported the movement of 16.1 million tons of dry bulk (iron ore, coal, stone, cement) and liquid (gasoline, diesel, heating oil) cargoes. These cargoes were valued at more than \$579 million U.S. dollars. Operation Taconite ended on 11 April 2017.

c. Sector Detroit commenced Operation Coal Shovel on 20 December 2016. During the 100 days of icebreaking operations, the three USCG cutters and two CCG ships assigned to the operation spent a total of 77 hours in the ice, assisting 15 commercial vessels transits. Operation Coal Shovel secured on 29 March 2017.

d. In total, the eight USCG cutters expended 2,420 cutter resource hours in support of Ninth District icebreaking operations.

e. The efforts of the cutters would not have been possible without the assistance of our valuable partners. AIRSTA Detroit, AIRSTA Traverse City, and CG Auxiliary provided

valuable over flights providing Tactical Commanders with real time ice conditions. U.S. and Canadian Coast Guard, and Auxiliary aviators flew an estimated 32 sorties in support of operations Taconite and Coal Shovel. This valuable aerial reconnaissance and ice analysis remained vital to operational planning and successful mission execution. NOAA and the Canadian Ice Service provided excellent forecasts and satellite imagery to further support operational planning. Lastly, our international partners at the Canadian Coast Guard offered their expertise and services. The participation of CCGS SAMUEL RISLEY and CCGS GRIFFON, coupled with the shore side support in Sarnia, Montreal, Ottawa, and Halifax ensured the successful execution of another icebreaking season. Additional information regarding Canadian Coast Guard support can be found in Enclosures (1) and (2).

f. The Ninth District and Canadian Coast Guard co-hosted a Great Lakes Icebreaking Conference in October 2016 in Burlington, ON, coupled with our industry partners, laying the groundwork for a successful ice season and covering vital lessons learned from the previous season. Additionally, ice rescue training was conducted by the Ninth District RFO team with all equipped district units to ensure continued SAR capability while underway. Valuable icebreaking teleconferences were held biweekly with our industry partners, which allowed the CCG and USCG to ensure the best placement of assets, based on forecasted predictions and scheduled vessel movements.

2. Winter Severity:

a. The winter of 2016-2017 proved to be a very mild icebreaking season. Above average temperatures in the late fall and early winter held lake temperatures above normal levels.

b. Though ice buildup began earlier than the previous year, the mild weather pattern persisted throughout the winter navigation season. See enclosures (3) and (4) for detailed charts of the seasons ice coverage.

c. The remarkably warm pattern that developed over the Great Lakes in 2016-2017 resulted in maximum ice coverage of 14.2% in early February.

d. The following summarizes the maximum ice conditions observed in key locations of the D9 AOR:

- (1) Thunder Bay: 3” plate ice with 12” snow cover.
- (2) Duluth-Superior: 24” plate ice with 8-12” brash accumulations.
- (3) Whitefish Bay: 24-36” plate ice with 2-3’ windrows.
- (4) St. Mary’s River: 18-24” plate ice with 12” brash accumulations.
- (5) Straits of Mackinac: 24-30” plate ice with 1-3’ windrows.

(6) Green Bay (North): 24” plate ice with 12” snow cover.

(7) Green Bay (South): 24” plate ice with 12” snow cover.

(8) Georgian Bay: 12-18” plate ice with 6-8” snow cover.

3. Economic Value:

a. Estimated at \$579 million dollars for Operation Taconite. The Lake Carriers Association is expected to publish economic data for the 2016-2017 ice season later this year.

b. Economic values for Operation Coal Shovel were not provided but assumed to be of less value than Operation Taconite.

4. Performance Standards and Data Collection:

a. 100% of Domestic Icebreaking requests met.

(1) 658 navigation assistance requests made

(2) 1 requests declined (outlined below in Taconite’s operational summary)

b. Icebreaking Asset Availability:

(1) 2,420 total icebreaking operation hours

(2) 4,704 scheduled Charlie hours

(3) 380 unscheduled Charlie hours

c. At least three icebreaking assets were operationally available throughout the entire icebreaking season. Maintenance periods during ice season are scheduled during the closed season, when navigation through the Great Lakes is extremely limited, and fewer icebreaking resources are required.

d. The Great Lakes fleet experienced 16 lost cutter days due to the following casualties:

(1) 21-Mar-17: KATMAI BAY Fuel Leak (16 days)

e. A breakdown of cutter asset hours by icebreaking mission is captured in Enclosures (1) and (2).

f. Tier 1 Waterways were open 99.95% of the ice season (5,077 hours of 5,090 total hours).

(1) 5,090 hours of Tier 1 Availability (potential)

(a) St. Mary's River/Straits of Mackinac: 2,702 hours

(b) Detroit/St. Clair River System: 2,388 hours

(2) 5,077 hours of Tier 1 Availability (actual)

(a) St. Mary's River/Straits of Mackinac: 2,689 hours

(b) Detroit/St. Clair River System: 2,388 hours

(3) Waterway restrictions and closures are outlined in the respective operational summaries below.

5. Operation Coal Shovel:

a. Search and Rescue Response Requests: 1 (MISLE WWM Activity 1072242)

b. Urgent Vessel Response Requests: 0

c. Exigent Community Service Requests: 0

d. Navigation Assistance Requests: 28

e. Vessels Assisted: 28

f. Waterway Restrictions: 0

g. Waterway Closures: 0

h. Tier 1 Availability: 100% (2,388 hours of 2,388 total hours).

6. Operation Taconite:

a. Search and Rescue Response Requests: 1 (MISLE WWM Activity 1070154)

b. Urgent Vessel Response Requests: 1 (MISLE WWM Activity 6071908)

c. Exigent Community Service Requests: 1 (MISLE WWM Activity 6087130)

d. Navigation Assistance Requests: 630 (1 declined)

e. Vessel Transits Assisted: 601

f. Waterway Restrictions: 3 (MISLE WWM Activities: 6068486, 6071908, and 6112284)

g. Waterway Closures: 0

h. Tier 1 Availability: 99.9% (2,689 hours of 2,702 total hours)

i. The Great Lakes Regulated Navigation Areas (33 CFR Part 165.901) and those waterways defined by the St. Mary’s River Winter Navigation Rules (33 CFR Part 162.117) were closed and re-opened as follows:

- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| (1) Grays Reef Passage            | 11-Jan-17 to 27-Mar-17 (75 days)  |
| (2) South Channel                 | 11-Jan-17 to 12-Mar-17 (60 days)  |
| (3) Mackinac Island to St. Ignace | Waterway was not closed           |
| (4) West Neebish Channel          | 19-Jan-17 to 24-Mar-17 (64 days)  |
| (5) Pipe Island Passage           | 11-Jan-17 to 22-Mar-17 (70 days)  |
| (6) Little Rapids Cut (Ice Boom)  | 12-Dec-16 to 12-Apr-17 (121 days) |

7. Statistical Summary: The Statistical Data Summary for Operation Taconite 2016-2017 is included as Enclosure (1).

8. Night Operations: U.S. Coast Guard Cutters assigned to Operation Taconite conducted 23 hours of night time icebreaking. Cutters assigned to Operation Coal Shovel conducted 00 hours of night time icebreaking.

9. Future Plans and Recommendations:

a. The ongoing operational effects of losing a WTGB to SLEP are important to keep in mind for future seasons. Whereas Ninth District WTGBs will continue to pursue the dual-crew initiative, it may not always be plausible. If necessary, D9 will continue to request additional Canadian icebreaking assets to assist during more challenging ice years where assistance may be necessary for Spring Breakout.

b. See Enclosures (1) and (2) for additional recommendations from the Tactical Commanders.

#

- Enclosures:
- (1) 2016-2017 Operation TACONITE End of Season Ice Report
  - (2) 2016-2017 Operation COAL SHOVEL End of Season Ice Report
  - (3) Single Season: Weekly Ice Coverage for the Season 2016/17
  - (4) Historical Total Accumulated Ice Coverage (TAC)

Copy: CGD One (dpw)  
CGD Five (dpw)  
CGC MACKINAW  
CGC HOLLYHOCK  
CGC ALDER  
CGC MOBILE BAY  
CGC BRISTOL BAY  
CGC NEAH BAY  
CGC BISCAYNE BAY  
CGC KATMAI BAY  
CGC MORRO BAY  
CG Sector Buffalo  
CG Sector Detroit  
CG Sector Lake Michigan  
CG Sector Sault Ste Marie  
CG AIRSTA Traverse City  
CG AIRSTA Detroit

U.S. Department of  
Homeland Security

United States  
Coast Guard



Commander  
United States Coast Guard  
Sector Sault Sainte Marie

337 Water Street  
Sault Sainte Marie, MI 49783  
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Phone: (906) 635-3299  
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16150  
17-05-901  
25 May 2017

## MEMORANDUM

From: M. R. Broz, CAPT  
CG SECTOR Sault Sainte Marie (s)

To: CGD NINE (d)  
Thru: (1) CCD NINE (dpw)  
(2) CCD NINE (dp)

Subj: OPERATION TACONITE END OF SEASON REPORT

Ref: (a) Domestic Ice Breaking Operations Policy, COMDTINST 16151.1D  
(b) D9 Ice Breaking Standard Operating Procedures (SOP), D9INST M16150.2B

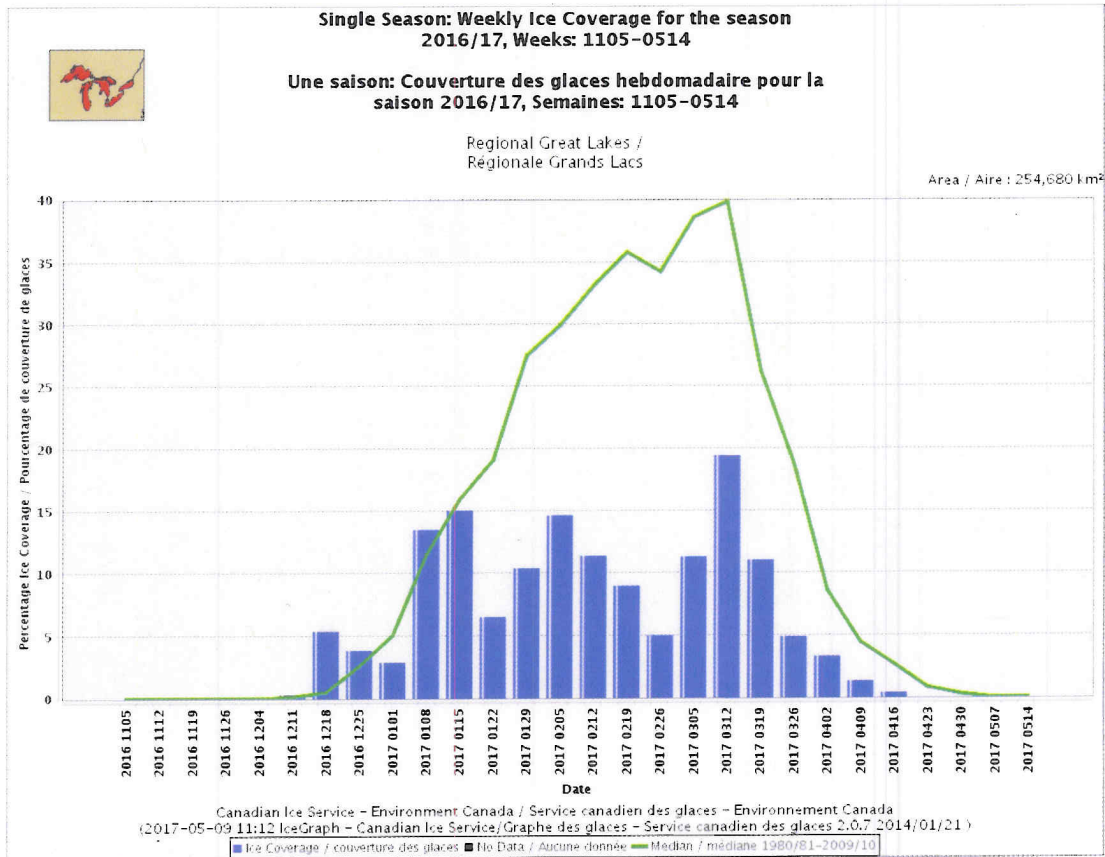
1. During the 2017 domestic ice breaking season, the six U.S. Coast Guard cutters assigned to Operation Taconite spent a total of 2,343 hours in the ice and assisted 601 commercial transits. Forty-five of these transits (24 US and 21 CA) required direct icebreaker assistance to complete their intended movements.
2. Operation Taconite commenced on 19 December 2016 and ended on 11 April 2017. Great Lakes maritime industry stakeholders estimate 16.1 million tons of dry bulk (iron ore, salt, coal, stone and cement) and liquid (gasoline, diesel, and home heating oil) cargoes received ice-breaking assistance during the 2017 winter navigation season. These cargoes, valued at more than \$579 million U.S. dollars, provided critical industrial production and power generation capability for the Great Lakes region during the 113-day operational period. U.S. Coast Guard cutters delivered 146 hours of ice breaking in Canadian waters. Canadian Coast Guard ships did not break ice in the U.S. waters of Op Taconite's area of responsibility.
3. The National Oceanographic Atmospheric Administration (NOAA), with input provided by the Great Lakes Environmental Research Laboratory (GLERL), classified the 2017 ice season as "mild". An analysis of the 2017 winter weather and ice thickness measurements appears in enclosure 1. Enclosure 2 contains the statistical data summary and the measures of effectiveness required by references (a) and (b).
4. I look forward to the update of reference (b) and appreciate the inclusion of my staff in the development process.

## Enclosure (1) to 2017 Operation Taconite End of Season Report

### Weather Analysis and Ice Thickness Measurements:

The National Oceanographic Atmospheric Administration (NOAA), with input provided by the Great Lakes Environmental Research Laboratory (GLERL), classified the 2017 ice season as “mild”. The following table summarizes the maximum ice conditions observed in key locations of the Operation Taconite area of responsibility.

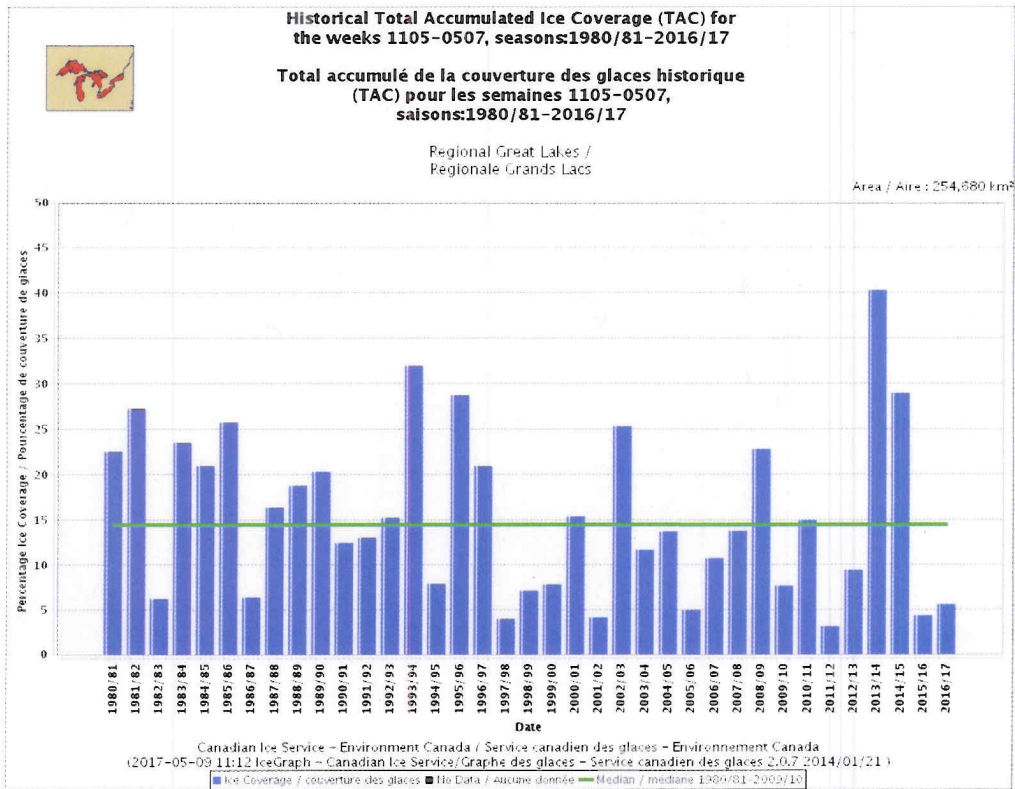
- a. Thunder Bay: 30” plate ice with 12” snow cover.
- b. Duluth-Superior: 24” plate ice with 8-12” brash accumulations.
- c. Lake Superior (west): NSTR.
- d. Lake Superior (east): NSTR.
- e. Whitefish Bay: 24-36” plate ice with 2-3’ windrows.
- f. St. Marys River: 18-24” plate ice with 12” brash accumulations.
- g. Straits of Mackinac: 24-30” plate ice with 1-3’ windrows.
- h. Green Bay (North): 24” plate ice with 12” snow cover.
- i. Green Bay (South): 24” plate ice with 12” snow cover.
- j. Georgian Bay: 12-18” plate ice with 6-8” snow cover.



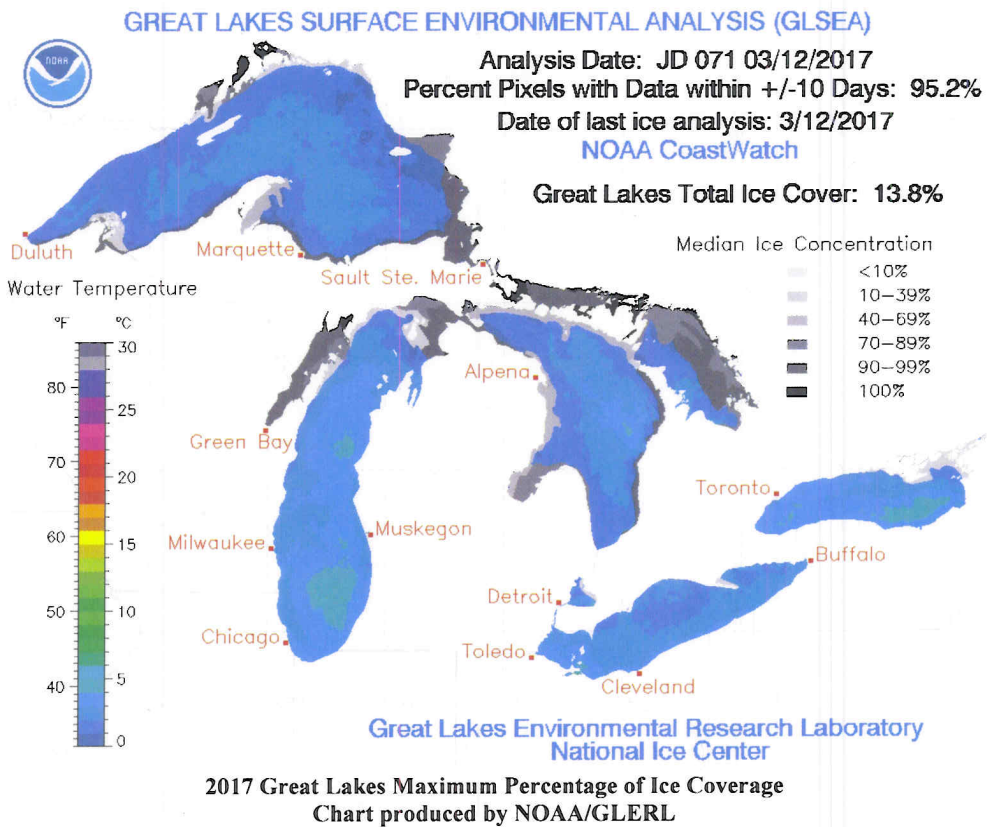
**Single Season: Weekly Ice Coverage  
Compared to the Median (1981-2010)**  
Chart produced by the Canadian Ice Service



# Enclosure (1) to 2017 Operation Taconite End of Season Report



**Great Lakes Total Accumulated Ice Coverage 1980-2017**  
 Chart produced by the Canadian Ice Service



## Enclosure (2) to 2017 Operation Taconite End of Season Report

### 1. Performance Measures:

- a. Search and Rescue Response Requests: One event (MISLE WWM Activity 1070154).
- b. Urgent Vessel Assistance Requests: One event (MISLE WWM Activity 6071908).
- c. Exigent Community Service Requests: One event (MISLE WWM Activity 6087130).
- d. Icebreaking Service Requests: The Incident Commander (IC) received 630 requests for ice breaking assistance. Only one of these requests was declined. In this instance, the IC deferred the 24 March assistance request from Canadian Steamship Lines (M/V BAIE COMEAU departing Midland, ON) to the Canadian Coast Guard. With the loss of CGC KATMAI BAY due to a mechanical failure and CGC ALDER assisting vessels departing the Port of Thunder Bay, an Op Taconite resource was not available to respond.
- e. Vessel Transits Assisted: 601 vessel transits were assisted. 524 of these transits occurred in the St Marys River. 26 transits were assisted while crossing the Straits of Mackinac. 45 transits were assisted in Green Bay and six movements were facilitated in western Lake Superior. Of the total transits assisted, 45 vessels (24 U.S. and 21 CA) required direct ice breaking assistance to complete their intended movements.
- f. Waterway Restrictions: Three events (MISLE WWM Activities: 6068486, 6071908, and 6112284).
- g. Waterway Closures: None
- h. Tier 1 Availability: 99.9%; 2689 of a possible 2702 hours.
  1. Extended Navigation Season: 99.7%; 656 of a possible 658 hours
  2. Closed Navigation Season: 100%; 1344 of a possible 1344 hours.
  3. Spring Break Out: 98.4%; 689 of a possible 700 hours.
- i. Planned Waterway Closures: Per 33 CFR Parts 162.117 and 165.901, the following waterways were purposely closed or restricted by the Captain of the Port Sault Sainte Marie.
  1. Grays Reef Passage: 11-Jan-17 to 27 Mar-17 (75 days)
  2. South Channel: 11-Jan-17 to 12-Mar-17 (60 days)
  3. Waters Btwn Mackinac Is. and St. Ignace: Waterway was not closed
  4. West Neebish Channel: 19-Jan-17 to 24-Mar-17 (64 days)
  5. Pipe Island Passage: 11-Jan-17 to 22-Mar-17 (70 days)
  6. Little Rapids Cut (Ice Boom): 12-Dec-17 to 12-Apr-17 (121 days)

## Enclosure (2) to 2017 Operation Taconite End of Season Report

### 2. Statistical Summary:

#### a. Aerial Support:

HH65	03 Sorties
CG Auxiliary	13 Sorties
CCG Dash-8	01 Sortie

#### b. Cutter Employment:

##### Area 4A (Lake Huron / Georgian Bay / North Channel) - 33 Hrs of Cutter Support

Cutter	DAVA PI FR FC MC	US CA FF
Biscayne Bay	02/025/000/00/00/006	00 01 00
Totals	02/025/000/00/00/006	00 01 00

##### Area 4B (Lake Huron / Alpena / Calcite Hbr) 04 Hrs of Cutter Support

Cutter	DAVA PI FR FC MC	US CA FF
Morro Bay	00/000/000/00/00/004	00 00 00
Totals	00/000/000/00/00/004	00 00 00

##### Area 5A (Straits of Mackinac) - 445 Hrs of Cutter Support

Cutter	DAVA PI FR FC MC	US CA FF
Mackinaw	05/013/023/00/00/113	01 00 00
Biscayne Bay	04/011/029/00/00/104	00 02 00
Katmai Bay	01/022/007/00/00/090	00 01 00
Morro Bay	00/000/001/00/00/022	00 00 00
Totals	10/046/060/00/00/329	01 03 00

##### Area 5B (Charlevoix / Grand Traverse Bay) No Cutter Activity

##### Area 6A (Whitefish Bay) - 349 Hrs of Cutter Support

Cutter	DAVA PI FR FC MC	US CA FF
Mackinaw	04/031/004/00/00/052	00 01 00
Biscayne Bay	00/049/000/00/00/048	00 00 00
Katmai Bay	00/000/023/00/00/011	00 00 00
Morro Bay	13/072/000/00/00/042	02 02 00
Totals	10/152/027/00/00/153	02 03 00

**Enclosure (2) to 2017 Operation Taconite End of Season Report**

**Area 6B (St Marys River - 988 Hrs of Cutter Support**

Cutter	DAVA PI FR FC MC	US CA FF
Mackinaw	08/068/066/03/00/220	02 02 00
Mobile Bay	00/037/017/00/00/040	00 00 00
Biscayne Bay	02/021/035/00/00/027	00 04 00
Katmai Bay	03/087/066/20/00/079	06 03 00
Morro Bay	00/000/115/01/00/067	01 00 00
Bristol Bay	02/002/002/00/00/000	00 00 00
<b>Totals</b>	<b>15/215/301/24/00/433</b>	<b>09 09 00</b>

**Area 7 (Eastern Lake Superior / Marquette / Keweenaw) No Cutter Activity**

**Area 8A (Duluth, Superior, Two Hbrs, Silver Bay, Taconite Hbr) - 71 Hrs of Cutter Support**

Cutter	DAVA PI FR FC MC	US CA FF
Alder	02/022/018/00/00/027	00 00 00
Mobile Bay	00/002/000/00/00/000	00 00 00
<b>Totals</b>	<b>02/024/018/00/00/027</b>	<b>01 00 00</b>

**Area 8B (Thunder Bay, Ont) - 113 Hrs of Cutter Support**

Cutter	DAVA PI FR FC MC	US CA FF
Alder	03/062/000/00/00/010	00 01 00
Mobile Bay	06/022/000/00/00/010	00 02 00
<b>Totals</b>	<b>09/084/000/00/00/020</b>	<b>00 03 00</b>

**Area 9 (Green Bay) - 340 Hrs of Cutter Support**

Cutter	DAVA PI FR FC MC	US CA FF
Mackinaw	00/000/015/00/00/009	00 00 00
Mobile Bay	16/088/023/00/00/073	03 02 00
Biscayne Bay	22/049/002/00/00/043	08 00 00
<b>Totals</b>	<b>38/137/040/00/00/125</b>	<b>11 02 00</b>

**Area 10A (Lake Michigan-West Milwaukee) No Cutter Activity**

**Area 10B (Lake Michigan-South Calumet-Gary-Indiana-Burns Hbrs) No Cutter Activity**

**Area 10C (Lake Michigan-East Ludington) No Cutter Activity**

**Op Taconite Totals**

Cutter	DA	VA	PI	FR	FC	MC	US	CA	FF	Total Hrs in the Ice
Mackinaw	017	112	108	03	00	0394	03	03	00	0634
Alder	005	084	018	00	00	0037	01	01	00	0144
Mobile Bay	022	149	040	00	00	0123	03	04	00	0334
Bristol Bay	002	002	002	00	00	0000	00	00	00	0006
Biscayne Bay	030	155	066	00	00	0228	08	07	00	0479
Morro Bay	013	072	116	01	00	0135	03	02	00	0337
Katmai Bay	004	109	096	20	00	0180	06	04	00	0409
<b>Totals</b>	<b>093</b>	<b>683</b>	<b>446</b>	<b>24</b>	<b>00</b>	<b>1097</b>	<b>24</b>	<b>21</b>	<b>00</b>	<b>2343</b>

## Enclosure (2) to 2017 Operation Taconite End of Season Report

**3. Night Operations:** U.S. Coast Guard cutters assigned to Operation Taconite conducted 23 hours of night time ice breaking.

**4. Sufficiency/Adequacy of Icebreaking Assets:** Adequate.

Seasonal Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Unsked Charlie)
KATMAI BAY	380 Hrs	00 Hrs	Fuel Leak as rptd in DTG 211200Z MAR 17

**5. MISLE Case Summary:**

WWM Activity	Event Summary
6056604	VTS Directive: Little Rapids Cut (Planned WW Closure)
6059808	MacArthur Lock Closure (Planned)
6059847	MTS Disruption: Op Taconite
6068486	WW Restriction: M/V JOHN B AIRD in the SMR at Pt Aux Frenes
6071908	Urgent Vsl Assist: M/V THUNDER BAY in the SMR at Winter Pt resulting in a WW Restriction.
6072494	RNA: Grays Reef Passage (Planned WW Closure)
6072496	RNA: South Channel (Planned WW Closure)
6072499	VTS Directive: Pipe Island Channel (Planned WW Closure)
6075097	VTS Directive: West Neebish Channel (Planned WW Closure)
6075112	Poe Lock Closure (Planned)
Case 1070154	SAR: CGC BISCAYNE BAY u/w to support Beaver Island MEDIVAC
6087130	Exigent Community Svc: Sugar Island Ferry encumbered by ice for 15 hrs.
6112284	WW Restriction: M/V ATLANTIC HURON in the SMR at Mud Lk JCT

Per CG-WWM-3, waterway management activities were created to document “ice and wx analysis”, “industry outreach”, and “tfc mgmt efforts” performed by the Sector staff. These activities are not listed in this summary but are available upon request.

U.S. Department of  
Homeland Security

United States  
Coast Guard



Commander  
U.S. Coast Guard Sector Detroit

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Detroit, MI 48207  
Phone: (313) 568-9508  
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16155  
30 May 2017

## MEMORANDUM

From:  K. D. Floyd, CDR  
CG SECTOR Detroit

To: CCGD NINE (dpw)

Subj: 2016 – 2017 OPERATION COAL SHOVEL ANNUAL REPORT

Ref: (a) Domestic Icebreaking Policy and Reporting Requirements, COMDTINST 16151.1C  
(b) Ninth District Icebreaking Policy and Procedures, D9INST M16150.2B  
(c) Operation Coal Shovel Standard Operating Procedures, SECDETINST 16150

1. This report outlines significant events occurring during Operation Coal Shovel for the 2016 – 2017 ice season and is submitted in accordance with reference (b). A detailed summary of Operation Coal Shovel is contained in Enclosure (1).
2. Operation Coal Shovel commenced on December 20, 2017 and concluded on March 29, 2017. In support of Operation Coal Shovel, U.S. Coast Guard cutters conducted a total of 77 hours of icebreaking.
3. The Sector Detroit point of contact for this report is LT Selena Warnke at (313) 568-9508.

#

Enclosures: (1) Operation Coal Shovel Statistical Data Summary  
(2) Operation Coal Shovel Weekly Summaries  
(3) USCGC BRISTOL BAY End of Season Ice Report  
(4) USCGC MORRO BAY End of Season Ice Report  
(5) USCGC HOLLYHOCK End of Season Ice Report

Copy: Sector Sault Ste Marie  
Sector Buffalo  
CGC BRISTOL BAY  
CGC MORRO BAY  
CGC HOLLYHOCK

# **2016-2017 Operation Coal Shovel Statistical Data Summary**

## **I. Winter Assessment**

Operation Coal Shovel began on December 20, 2016 and concluded on March 29, 2017 after 100 consecutive days. Mild weather patterns in the late fall and early winter held lake temperatures above normal levels. The mild weather pattern persisted throughout the winter navigation season with occasional periods of more typical seasonal temperatures but never for a significant duration such to enable measurable ice growth.

Ice growth commenced in the Western Basin of Lake Erie in the second week of December 2016, with new ice rapidly covering Sandusky Bay. Continued ice formation in the Western Basin resulted in complete coverage with new and thin lake ice through the third week of December. However, ice growth did not sustain and weather fluctuations caused the ice cover to diminish near the end of the month and retreat to the northern section of the basin. The 2016-2017 winter never saw lake ice achieve measurable levels or witnessed consistent periods of accumulation to the point where it became a significant hindrance to navigation. Operation Coal Shovel kicked off following a request for assistance from a vessel attempting to enter Maumee Bay on December 18, 2016. An ice floe created when thick ice in the Port of Monroe was broken by commercial services for a vessel. Winds out of the northwest created a hazardous situation for the vessel at anchor and resulted in an accumulation of packed broken plate at the entrance to Maumee Bay. Assistance was coordinated through D9 and the decision was made to initiate Coal Shovel two days later. Mid to late March saw some packed pancake ice in the St. Clair River which required several days of flushing operations to maintain flow of ice into Lake St. Clair. Operation Coal Shovel concluded on March 29, 2017 after a sustained period of above average temperatures.

## **II. Icebreaking Data**

### **Season Totals:**

1. Total number of days for Operation Coal Shovel:
  - a. **100 days** - From December 20, 2016 to March 29, 2017
2. USCG Cutters and Canadian CG ships participated in Operation Coal Shovel:
  - a. **Three USCG Cutters:** HOLLYHOCK, BRISTOL BAY, MORROW BAY
  - b. **Two Canadian Ships:** SAMUEL RISLEY, GRIFFON

3. Search and Rescue Response Requests: **1**
  - a. On March 18, 2017 Sector Detroit Command Center received a call from the Detroit River Walk Security reporting a possible PIW in the Detroit River in vicinity of Hart Plaza. A good Samaritan reported hearing cries for help but was unsure where it was coming from and the voice was "fading away." Detroit River ice conditions prevented Station Belle Isle surface assets from responding. CCGS SAMUEL RISLEY and CGC BRISTOL BAY were diverted from ice operations in Lake St. Clair to assist in the search. River Walk Security reviewed camera footage starting an hour before incident time until incident time with no signs of distress found. No missing persons report filed with Wayne County. ACTSUS was granted after all searches were completed with negative results.
4. Urgent Vessel Response Requests: **0**
5. Exigent Community Service Requests: **0**
6. Vessel Direct Assists: **15**
  - a. **07** U.S. flag vessels
  - b. **08** Canadian flag vessels
7. Waterways Restrictions: **0**
  - a. The one-way traffic pattern on the St. Clair River imposed by the Captain of the Port during the previous two winter navigation seasons was not warranted during the 2016-2017 winter. Two-way traffic remained in effect with very limited ice conditions throughout the winter.
8. Waterway Closures: **0**
  - a. Ice conditions and traffic density remained at manageable levels throughout the winter. Icebreakers were able to conduct track maintenance and manage all vessel traffic without the imposition of any restrictions or closures of the waterway.
9. Aircraft Flyover hours ISO of Coal Shovel: **27 hours**
  - a. Air Station Detroit provided all ice reconnaissance flights for Operation Coal Shovel during the 2016-2017 winter season. Aircrews performed two sorties per week during the heaviest ice weeks, frequently hosting a Sector Detroit Ice Observer.
  - b. Auxiliary aircraft support was not requested during the winter season due to manageable ice conditions and flight availability by Air Station Detroit.
10. Total Tier 1 Waterways Availability: **100%**



**Availability per Tier 1 Waterway:**

	<b>Hours</b>	<b>Hours Closed</b>	<b>Percentage Per Waterway</b>
a. St. Clair River	2388	0	100
b. Detroit River	2388	0	100
c. Pelee Passage	2388	0	100
g. St. Lawrence Seaway	Not included		

**11. Beset vessels: 01**

a. During week four of Operation Coal Shovel, a vessel became beset in the vicinity of Pelee Pass and was freed by CCGS GRIFFON.

**12. Vessel Queue System: Not employed during the 2016-2017 winter.**

**13. Hours of icebreaking total by USCG Cutters: 106**

**Icebreaking Hours per USCG Cutter:**

<b>Cutter</b>	<b>Total Hours</b>
a. USCGC HOLLYHOCK:	<b>08 hours</b>
b. USCGC BRISTOL BAY	<b>39.5 hours</b>
c. USCGC MORRO BAY	<b>24.5 hours</b>

**Icebreaking Hours per Area:**

<b>AREA 1A EASTERN LAKE ERIE</b>					
<b>CUTTER</b>	<b>DA</b>	<b>VA</b>	<b>PI</b>	<b>MC</b>	<b>TOTAL</b>
N/A	00	00	00	00	00

<b>AREA 1B LAKE ONTARIO &amp; ST. LAWRENCE SEAWAY</b>					
<b>CUTTER</b>	<b>DA</b>	<b>VA</b>	<b>PI</b>	<b>MC</b>	<b>TOTAL</b>

N/A	00	00	00	00	00
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<b>AREA 2A ST CLAIR RIVER &amp; HURON CUT</b>					
<b>CUTTER</b>	<b>DA</b>	<b>VA</b>	<b>PI</b>	<b>MC</b>	<b>TOTAL</b>
BRISTOL BAY	00	04.5	05	00	09.5
HOLLYHOCK	00	00	08	00	08

<b>AREA 2B LAKE ST CLAIR</b>					
<b>CUTTER</b>	<b>DA</b>	<b>VA</b>	<b>PI</b>	<b>MC</b>	<b>TOTAL</b>
N/A	00	00	00	00	00

<b>AREA 2C DETROIT RIVER LT TO LAKE ST CLAIR LT 1</b>					
<b>CUTTER</b>	<b>DA</b>	<b>VA</b>	<b>PI</b>	<b>MC</b>	<b>TOTAL</b>
BRISTOL BAY	01	00	10	00	11

<b>AREA 2D WESTERN LAKE ERIE</b>					
<b>CUTTER</b>	<b>DA</b>	<b>VA</b>	<b>PI</b>	<b>MC</b>	<b>TOTAL</b>
BRISTOL BAY	00	00	18.5	00.5	19
MORROW BAY	11	6.5	07	00	24.5

<b>AREA 3A LAKE HURON</b>					
<b>CUTTER</b>	<b>DA</b>	<b>VA</b>	<b>PI</b>	<b>MC</b>	<b>TOTAL</b>
N/A	00	00	00	00	00

AREA 3B SAGINAW BAY					
CUTTER	DA	VA	PI	MC	TOTAL
N/A	0	0	0	0	0

**DA** = Direct Assistance  
**VA** = Vessel Assistance  
**PI** = Preventive Icebreaking  
**MC** = Miscellaneous

### III. Opportunities for Improvement and Best Practices

#### 1. Opportunities for Improvement

- a. Begin communications with industry well in advance of Operation Coal Shovel kickoff. Prior to commencement of Operation Coal Shovel this season, Sector Detroit received a request for icebreaking assistance when a northwest wind pushed newly broken ice out of the Port of Monroe, packing broken plate ice into the mouth of the Maumee River and creating a hazardous ice flow which impacted a freighter at anchor. Operation Coal Shovel had not yet been initiated at that time because ice conditions throughout the AOR were mild. D9 tasked a cutter to provide assistance. However, the closest resource available was moored in Cleveland, and the need for assistance had diminished before the cutter arrived on scene, with a shift in wind direction. Institution of pre-season teleconferences would improve the channel of communication between industry and US Coast Guard prior to operation commencement.
- b. Technological challenges resulted in significant delays to imagery upload following ice observer flights. By the end of the season, a system was developed to enable timely upload of overflight photos to Homeport. These lessons learned will be incorporated in to the ice observer training for the 2017-2018 season.

#### 2. Best Practices

- a. A formalized roster and ice observer rotation was implemented, utilizing ANT Detroit and Command Center personnel. Preseason training was conducted for Ice Observers and Air Station personnel.
- b. Use of Customs and Border Protection cameras provided immediate access for Ice Officers to view ice conditions and vessel traffic on the St. Clair River. All Ice Officers were granted a tour of the Operation Integration Center for familiarization with camera coverage areas and procedures for gaining access to camera feeds.
- c. Use of the Prevention iPad enabled consolidation of all references and provided portable access to weather and ice forecast websites as well as Marine Traffic AIS tracking during evening and weekend hours.

- d. Ice Officer ride alongs on US and Canadian icebreakers as well as commercial deep draft vessels have afforded personnel valuable insight into the complexities of ice season navigation and icebreaking operations while strengthening professional relationships with mariners and icebreaker crews. Both Ice Officers were able to take advantage of these opportunities during the 2016-17 season and will seek to get underway with additional ice breakers and commercial vessels each season to further broaden their experiences.

**COAL SHOVEL WEEKLY SUMMARY  
20 DEC 2016 thru 25 DEC 2016**

Ref: CCGD9INST M16150.2B

1. Situation:

On 20 December 2016, The Commander of CG Sector Detroit has commenced Operation Coal Shovel. CGC Morro Bay and CG Bristol Bay were assigned to Sector Detroit TACON. While Lake St. Clair had some ice building, the majority of concern was in the Western Basin of Lake Erie, particularly East Outer channel and the entrance to the Detroit River. Currently all Tier I and Tier II have no significant Ice concerns with 1/10 coverage 1-2 inch drifting ice plates. The Livingston Channel has been converted to two-way traffic. CGC Morro Bay has assumed C status and CGC Bristol Bay is currently moored at home port in icebreaking standby in B2 status for SAR guard.

2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
00	Navigation Assistance Requests
00	U.S. Vessels Assisted
01	CA Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
22	Icebreaking Resource Hours
00	Vessels beset

3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	136	0	100
Detroit River	136	0	100
Pelee Passage	136	0	100
St. Lawrence Seaway	Not Included		

4. Seasonal Totals

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests

00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
00	Navigation Assistance Requests
00	U.S. Vessels Assisted
01	CA Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
22	Icebreaking Resource Hours
00	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	136	0	100
Detroit River	136	0	100
Pelee Passage	136	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shove AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Future Plans:

Monitor commercial traffic, ice growth and forecasted weather.

**COAL SHOVEL WEEKLY SUMMARY**  
**26 DEC 2016 thru 01 JAN 2017**

Ref: CCGD9INST M16150.2B

1. Situation:

Warm weather has dissolved most of the ice within Operation Coal Shovel's AOR. No ice breaking operations were conducted. CGC Bristol Bay was assigned to Sector Detroit TACON. CGC Morro Bay was in a prescheduled Charlie period. There are no significant ice concerns in any Tier I or Tier II waterways. Ice is limited to 1/10 coverage with some shore ice along the shore of Pelee pass. Maumee Channel contains light new ice but has not impeded commercial vessel traffic. Saint Lawrence Seaway and Welland Locks have closed for the season. CGC Bristol Bay is currently moored at home port in I/B standby.

2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
00	Navigation Assistance Requests
00	U.S. Vessels Assisted
00	CA Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
00	Icebreaking Resource Hours
00	Vessels beset

3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	168	0	100
Detroit River	168	0	100
Pelee Passage	168	0	100
St. Lawrence Seaway	Not Included		

4. Seasonal Totals

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests

00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
00	Navigation Assistance Requests
00	U.S. Vessels Assisted
00	CA Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
00	Icebreaking Resource Hours
00	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	304	0	100
Detroit River	304	0	100
Pelee Passage	304	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shove AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Future Plans:

Monitor commercial traffic, ice growth and forecasted weather.



**COAL SHOVEL WEEKLY SUMMARY  
02 JAN 2017 2016 thru 08 JAN 2017**

Ref: CCGD9INST M16150.2B

1. Situation:

Colder weather has increased ice within Operation Coal Shovel's AOR. CGC Bristol Bay and CGC Morro Bay assigned during this week. CGC Morro Bay responded to 01 request for assistance in Sandusky Bay. The Western Basin of Lake Erie has 9-10 tenths coverage with 4-5 inches of ice. Maumee Channel contains light new ice but has not impeded commercial vessel traffic. CGC Morro Bay is currently moored at home port in I/B standby.

2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
01	Navigation Assistance Requests
01	U.S. Vessels Assisted
01	CA Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
9.5	Icebreaking Resource Hours
00	Vessels beset

3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	168	0	100
Detroit River	168	0	100
Pelee Passage	168	0	100
St. Lawrence Seaway	Not Included		

4. Seasonal Totals

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
01	Navigation Assistance Requests

01	U.S. Vessels Assisted
02	CA Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
31.5	Icebreaking Resource Hours
00	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	472	0	100
Detroit River	472	0	100
Pelee Passage	472	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shovel AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Ice Recon flights:

Ice Recon Flights				
Date:	Resource	CA/US/ AUX	Hours	Ice Observer:
2 JAN	CG 65	US	2	none
6 JAN	CG 65	US	2	BM3 Popovic

10. Future Plans: Monitor commercial traffic, ice growth and forecasted weather.

## COAL SHOVEL WEEKLY SUMMARY 09 JAN 2017 2016 thru 15 JAN 2017

Ref: CCGD9INST M16150.2B

### 1. Situation:

The weather has increased ice within Operation Coal Shovel's AOR at the beginning of the week and leading into the weekend. CGC Bristol Bay and CGC Morro Bay were assigned during this week. Mid week Pelee Pass IVO South East Shoal had 10 tenths coverage with 6-8 inches of ice. Canadian CGC Griffon conducted a convoy in Pelee Pass for the Manitoulin and the Sam Laud, freed the Calumet from being beset, and escorted 5 additional vessels. In response to a request for assistance, CGC Morro Bay escorted the tug Karen Andries pushing barge Endeavour through Pelee Pass, then made additional passes to wet the track, providing assistance to 3 additional vessels. Warmer temperatures lessened the ice coverage in Pelee Pass. CGC Morro Bay is currently moored in homeport in I/B standby. CGC Bristol Bay was in I/B standby for the week.

### 2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
12	Navigation Assistance Requests
06	U.S. Vessels direct Assisted
02	CA Vessels direct Assisted
03	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
15	Icebreaking Resource Hours
01	Vessels beset

### 3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	168	0	100
Detroit River	168	0	100
Pelee Passage	168	0	100
St. Lawrence Seaway	Not Included		

4. Seasonal Totals

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
21	Navigation Assistance Requests
07	U.S. Vessels direct Assisted
04	CA Vessels direct Assisted
03	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
46.5	Icebreaking Resource Hours
01	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	640	0	100
Detroit River	640	0	100
Pelee Passage	640	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shovel AOR	Open/ (Closed Sunday night 15 <sup>th</sup> at midnight)

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Ice Recon flights:

Ice Recon Flights				
Date:	Resource	CA/US/ AUX	Hours	Ice Observer:
11 JAN	CG 6579	US	2	MST1 Worrall
13 JAN	CG 6588	US	2	BM3 Popovic

10. Future Plans: Monitor commercial traffic, ice growth and forecasted weather

**COAL SHOVEL WEEKLY SUMMARY**  
**16 JAN 2017 2017 thru 22 JAN 2017**

Ref: CCGD9INST M16150.2B

1. Situation:

Warmer weather has significantly decreased the amount of ice in Coal Shovels AOR. CGC BRISTOL BAY and CGC MORRO BAY were assigned during this week. CGC BRISTOL BAY took this recent warm weather as an opportunity to break away from the Coal Shovel AOR and transited to the Taconite AOR to conduct ice training. CGC MORRO BAY and CGC BRISTOL BAY are currently moored in homeport in I/B standby.

2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
00	Navigation Assistance Requests
00	U.S. Vessels direct Assisted
00	CA Vessels direct Assisted
00	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
00	Icebreaking Resource Hours
00	Vessels beset

3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	168	0	100
Detroit River	168	0	100
Pelee Passage	168	0	100
St. Lawrence Seaway	Not Included		

4. Seasonal Totals

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests

21	Navigation Assistance Requests
07	U.S. Vessels direct Assisted
04	CA Vessels direct Assisted
03	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
46.5	Icebreaking Resource Hours
01	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	808	0	100
Detroit River	808	0	100
Pelee Passage	808	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shovel AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Ice Recon flights:

Ice Recon Flights				
Date:	Resource	CA/US/ AUX	Hours	Ice Observer:
18JAN17	65	US	2	MST2 Mclaughlin

10. Future Plans: Monitor commercial traffic, ice growth and forecasted weather

**COAL SHOVEL WEEKLY SUMMARY**  
**23 JAN 2017 thru 29 JAN 2017**

Ref: CCGD9INST M16150.2B

1. Situation:

Unseasonably warm weather has continued to decrease the amount of ice in Coal Shovel's AOR. CGC MORRO BAY and CGC BRISTOL BAY were both in I/B standby for the week. No ice breaking operations were conducted during this period.

2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
00	Navigation Assistance Requests
00	U.S. Vessels direct Assisted
00	CA Vessels direct Assisted
00	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
00	Icebreaking Resource Hours
00	Vessels beset

3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	168	0	100
Detroit River	168	0	100
Pelee Passage	168	0	100
St. Lawrence Seaway	Not Included		

4. Seasonal Totals

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
21	Navigation Assistance Requests
07	U.S. Vessels direct Assisted
04	CA Vessels direct Assisted



03	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
46.5	Icebreaking Resource Hours
01	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	976	0	100
Detroit River	976	0	100
Pelee Passage	976	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shovel AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Ice Recon flights:

Ice Recon Flights				
Date:	Resource	CA/US/ AUX	Hours	Ice Observer:
26JAN17	65	US	0.5	LTJG Gray

10. Future Plans: Monitor commercial traffic, ice growth and forecasted weather

**COAL SHOVEL WEEKLY SUMMARY**  
**30 JAN 2017 thru 05 FEB 2017**

Ref: CCGD9INST M16150.2B

1. Situation:

Mild weather has resulted in minimal formation of new ice within Coal Shovel's AOR. Commercial vessel traffic has been able to move through the system unhindered by ice. CGC MORRO BAY was in I/B standby for the week. CGC BRISTOL BAY is in Charlie until 13 February. No ice breaking operations were conducted during this period.

2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
00	Navigation Assistance Requests
00	U.S. Vessels direct Assisted
00	CA Vessels direct Assisted
00	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
00	Icebreaking Resource Hours
00	Vessels beset

3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	168	0	100
Detroit River	168	0	100
Pelee Passage	168	0	100
St. Lawrence Seaway	Not Included		

4. Seasonal Totals

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
21	Navigation Assistance Requests
07	U.S. Vessels direct Assisted

04	CA Vessels direct Assisted
03	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
46.5	Icebreaking Resource Hours
01	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	1144	0	100
Detroit River	1144	0	100
Pelee Passage	1144	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shovel AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Ice Recon flights:

Ice Recon Flights				
Date:	Resource	CA/US/ AUX	Hours	Ice Observer:
30JAN17	65	US	2.0	MST2 C. Mclaughlin
01FEB17	65	US	2.0	MK2 J. Ritchison
03FEB17	65	US	2.0	FN W. Mattson

10. Future Plans: Monitor commercial traffic, ice growth and forecasted weather

**COAL SHOVEL WEEKLY SUMMARY**  
**06 FEB 2017 thru 12 FEB 2017**

Ref: CCGD9INST M16150.2B

1. Situation:

Colder weather has resulted in new ice formation throughout Coal Shovel's AOR. Early in the week Coal Shovel received a report of densely packed ice in Lake St. Clair at the entrance to the St. Clair River. CCGS SAMUEL RISLEY responded, conducting preventative Ice Breaking resulting in a direct assist. Late in the week, Shore ice broke free from North Pelee Point resulting in medium Lake Ice passing through the shipping channel in Pelee Point. Two commercial vessels reported significant slowdowns in the area, both requesting ice breaking assistance. CCGS GRIFFON responded, resulting in 01 direct assist, 01 vessel was able to proceed without assistance. CCGS GRIFFON remained underway to provide escorts as needed.

2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
03	Navigation Assistance Requests
00	U.S. Vessels direct Assisted
02	CA Vessels direct Assisted
00	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
00	Icebreaking Resource Hours
00	Vessels beset

3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	168	0	100
Detroit River	168	0	100
Pelee Passage	168	0	100
St. Lawrence Seaway	Not Included		

4. Seasonal Totals:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
24	Navigation Assistance Requests
07	U.S. Vessels direct Assisted
06	CA Vessels direct Assisted
03	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
46.5	Icebreaking Resource Hours
01	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	1312	0	100
Detroit River	1312	0	100
Pelee Passage	1312	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shovel AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Ice Recon flights:

Ice Recon Flights				
Date:	Resource	CA/US/ AUX	Hours	Ice Observer:
08FEB17	65	US	2.0	LTJG GRAY

10. Future Plans: Monitor commercial traffic, ice growth and forecasted weather

## COAL SHOVEL WEEKLY SUMMARY

### 13 FEB 2017 thru 19 FEB 2017

Ref: CCGD9INST M16150.2B

#### 1. Situation:

Several warm days followed by a drop in temperature to below freezing resulted dense brash and pancake ice in Pelee Pass which hindered vessel movement early in the week. CGC BRISTOL BAY conducting preventative ice breaking to alleviate conditions in Western Lake Erie and remained underway to assist vessels as needed. CCGS GRIFFON also conducted preventative ice breaking in Pelee Pass and conducted 01 direct assist for a vessel transiting to Detroit. CCGS SAMUEL RISLEY broke ice in Goderich Harbor and provided 01 direct assist. 02 additional requests for assistance were received this week; both vessels successfully completed transit prior to the arrival responding ice breaking resources.

#### 2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
04	Navigation Assistance Requests
00	U.S. Vessels direct Assisted
02	CA Vessels direct Assisted
00	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
08	Icebreaking Resource Hours
00	Vessels beset

#### 3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	168	0	100
Detroit River	168	0	100
Pelee Passage	168	0	100
St. Lawrence Seaway	Not Included		

#### 4. Seasonal Totals:

Qty	Measure of Effectiveness
-----	--------------------------

00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
28	Navigation Assistance Requests
07	U.S. Vessels direct Assisted
08	CA Vessels direct Assisted
03	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
54.5	Icebreaking Resource Hours
01	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	1480	0	100
Detroit River	1480	0	100
Pelee Passage	1480	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shovel AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)



9. Ice Recon flights:

Ice Recon Flights				
<b>Date:</b>	<b>Resource</b>	<b>CA/US/ AUX</b>	<b>Hours</b>	<b>Ice Observer:</b>
13FEB17	65	US	2.0	LTJG Gray
17FEB17	65	US	2.0	OS2 Clemons

10. Future Plans: Monitor commercial traffic, ice growth and forecasted weather

## COAL SHOVEL WEEKLY SUMMARY

### 20 FEB 2017 thru 26 FEB 2017

Ref: CCGD9INST M16150.2B

1. Situation:

Mild weather has resulted in minimal formation of new ice within Coal Shovel's AOR. Commercial vessel traffic has been able to move through the system unhindered by ice. CGC MORRO BAY was in Charlie for the week. CGC BRISTOL BAY is in I/B stand by. No ice breaking operations were conducted during this period.

2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
00	Navigation Assistance Requests
00	U.S. Vessels direct Assisted
00	CA Vessels direct Assisted
00	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
00	Icebreaking Resource Hours
00	Vessels beset

3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	168	0	100
Detroit River	168	0	100
Pelee Passage	168	0	100
St. Lawrence Seaway	Not Included		

4. Seasonal Totals:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
28	Navigation Assistance Requests

07	U.S. Vessels direct Assisted
08	CA Vessels direct Assisted
03	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
54.5	Icebreaking Resource Hours
01	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	1648	0	100
Detroit River	1648	0	100
Pelee Passage	1648	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shovel AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Ice Recon flights:

Ice Recon Flights				
Date:	Resource	CA/US/ AUX	Hours	Ice Observer:
22 Feb 17	65	US	.5	SA Kerlee (returned due to fog)
24 Feb 17	65	US	0	BM3 Popovic (cxld due to fog)

10. Future Plans: Monitor commercial traffic, ice growth and forecasted weather

**COAL SHOVEL WEEKLY SUMMARY**  
**27 FEB 2017 thru 05 MAR 2017**

Ref: CCGD9INST M16150.2B

1. Situation:

Mild weather has resulted in deterioration of ice within Coal Shovel's AOR. Commercial vessel traffic has been able to move through the system unhindered by ice. CGC BRISTOL BAY remained in I/B stand by. CGC MORRO BAY was in Taconite's AOR for the duration of the week. No ice breaking operations were conducted during this period.

2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
00	Navigation Assistance Requests
00	U.S. Vessels direct Assisted
00	CA Vessels direct Assisted
00	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
00	Icebreaking Resource Hours
00	Vessels beset

3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	168	0	100
Detroit River	168	0	100
Pelee Passage	168	0	100
St. Lawrence Seaway	Not Included		

4. Seasonal Totals:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
28	Navigation Assistance Requests

07	U.S. Vessels direct Assisted
08	CA Vessels direct Assisted
03	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
54.5	Icebreaking Resource Hours
01	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	1816	0	100
Detroit River	1816	0	100
Pelee Passage	1816	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shovel AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Ice Recon flights:

Ice Recon Flights				
Date:	Resource	CA/US/ AUX	Hours	Ice Observer:
28 Feb 17	65	US	0	Canceled due to fog

10. Future Plans: Monitor commercial traffic, ice growth and forecasted weather

**COAL SHOVEL WEEKLY SUMMARY**  
**06 MAR 2017 thru 12 MAR 2017**

Ref: CCGD9INST M16150.2B

1. Situation:

Mild weather has resulted in deterioration of ice within Coal Shovel's AOR. Commercial vessel traffic has been able to move through the system unhindered by ice. CGC BRISTOL BAY remained in I/B stand by. CGC MORRO BAY's TACON was shifted to OP TACONITE. No ice breaking operations were conducted during this period.

2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
00	Navigation Assistance Requests
00	U.S. Vessels direct Assisted
00	CA Vessels direct Assisted
00	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
00	Icebreaking Resource Hours
00	Vessels beset

3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	168	0	100
Detroit River	168	0	100
Pelee Passage	168	0	100
St. Lawrence Seaway	Not Included		

4. Seasonal Totals:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
28	Navigation Assistance Requests

07	U.S. Vessels direct Assisted
08	CA Vessels direct Assisted
03	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
54.5	Icebreaking Resource Hours
01	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	1994	0	100
Detroit River	1994	0	100
Pelee Passage	1994	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shovel AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Ice Recon flights:

Ice Recon Flights				
Date:	Resource	CA/US/ AUX	Hours	Ice Observer:

10. Future Plans: Monitor commercial traffic, ice growth and forecasted weather.

## COAL SHOVEL WEEKLY SUMMARY

### 13 MAR 2017 thru 19 MAR 2017

Ref: CCGD9INST M16150.2B

#### 1. Situation:

Coal Shovel's AOR experienced several warm days followed by a drop in temperature to below freezing. Dense brash and pancake ice flowing in the St. Clair River created some minor blockages to the flow of ice into Lake St. Clair. CGC BRISTOL BAY, CGC HOLLYHOCK and CCGS SAMUEL RISLEY all conducted flushing operations and preventative ice breaking to alleviate and prevent additional ice flow blockages in the southern portion of the river. CGC BRISTOL BAY conducted 02 vessel assists in the St. Clair River. Commercial vessel traffic has been able to move through the system unhindered by ice. In addition to ice breaking duties, CGC BRISTOL BAY and CCGS SAMUEL RISLEY responded to 01 SAR Response Request.

#### 2. Performance Standards this week:

Qty	Measure of Effectiveness
01	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
00	Navigation Assistance Requests
00	U.S. Vessels direct Assisted
00	CA Vessels direct Assisted
02	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
17.5	Icebreaking Resource Hours
00	Vessels beset

#### 3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	168	0	100
Detroit River	168	0	100
Pelee Passage	168	0	100
St. Lawrence Seaway	Not Included		



4. Seasonal Totals:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
28	Navigation Assistance Requests
07	U.S. Vessels direct Assisted
08	CA Vessels direct Assisted
05	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
72	Icebreaking Resource Hours
01	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	2162	0	100
Detroit River	2162	0	100
Pelee Passage	2162	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shovel AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Ice Recon flights:

Ice Recon Flights				
Date:	Resource	CA/US/ AUX	Hours	Ice Observer:
16 Mar 17	HH-65	US	2.0	None
18 Mar 17	HH-65	US	2.0	None

10. Future Plans: Monitor commercial traffic, ice growth and forecasted weather.

## COAL SHOVEL WEEKLY SUMMARY 20 MAR 2017 thru 26 MAR 2017

Ref: CCGD9INST M16150.2B

1. Situation:

Coal Shovel's AOR experienced several warm days with little to no freezing temperatures. Early in the week, dense brash and pancake ice flowing in the St. Clair River created some minor blockages to the flow of ice into Lake St. Clair. CGC HOLLYOCK flushed the area to ensure any remaining ice in the river was moving with the current. Commercial vessel traffic has been able to move through the system unhindered by ice.

2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
00	Navigation Assistance Requests
00	U.S. Vessels direct Assisted
00	CA Vessels direct Assisted
00	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
05	Icebreaking Resource Hours
00	Vessels beset

3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	168	0	100
Detroit River	168	0	100
Pelee Passage	168	0	100
St. Lawrence Seaway	Not Included		

4. Seasonal Totals:

Qty	Measure of Effectiveness
01	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests

28	Navigation Assistance Requests
07	U.S. Vessels direct Assisted
08	CA Vessels direct Assisted
05	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
77	Icebreaking Resource Hours
01	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	2330	0	100
Detroit River	2330	0	100
Pelee Passage	2330	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shovel AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Ice Recon flights:

Ice Recon Flights				
Date:	Resource	CA/US/ AUX	Hours	Ice Observer:

10. Future Plans: Monitor commercial traffic and forecasted weather. Secure Operation Coal Shovel on 29 March 2017 if favorable conditions persist.

**COAL SHOVEL WEEKLY SUMMARY**  
**27 MAR 2017 thru 29 MAR 2017**

Ref: CCGD9INST M16150.2B

1. Situation:

Coal Shovel's AOR experienced several more warm days with little to no freezing temperatures. Operation Coal Shovel concluded at 1000 on 29 MAR 17.

2. Performance Standards this week:

Qty	Measure of Effectiveness
00	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
00	Navigation Assistance Requests
00	U.S. Vessels direct Assisted
00	CA Vessels direct Assisted
00	Vessels Assisted
00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
00	Icebreaking Resource Hours
00	Vessels beset

3. Weekly Hours per Tier I Waterway:

Waterway	Hours	Hours Closed	Percentage
St. Clair River	58	0	100
Detroit River	58	0	100
Pelee Passage	58	0	100
St. Lawrence Seaway	Not Included		

4. Seasonal Totals:

Qty	Measure of Effectiveness
01	Search and Rescue Response Requests
00	Urgent Vessel Response Requests
00	Exigent Community Service Requests
28	Navigation Assistance Requests
07	U.S. Vessels direct Assisted
08	CA Vessels direct Assisted
05	Vessels Assisted

00	Waterways Restrictions (hrs)
00	Waterways Closures (hrs)
100%	Tier I Availability
77	Icebreaking Resource Hours
01	Vessels beset

5. Seasonal Hours per Tier I Waterways

Waterway	Hours	Hours Closed	Percentage
St. Clair River	2388	0	100
Detroit River	2388	0	100
Pelee Passage	2388	0	100
St. Lawrence Seaway	Not Included		

6. Waterway Status:

Waterway	Status
Coal Shovel AOR	Open

7. Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

8. Seasonal Lost Cutter Hours:

Lost Cutter Hours			
Cutter	Casualty Related	Other - Logistics	Casualty (Charlie)

9. Ice Recon flights:

Ice Recon Flights				
Date:	Resource	CA/US/ AUX	Hours	Ice Observer:

10. Future Plans: N/A



16155  
01 May 2017

## MEMORANDUM

From:   
H. J. Kiffer, LCDR  
CGC BRISTOL BAY (WTGB 102)

Reply to: LTJG Fullmer  
Attn of:

To: CG SECTOR Detroit

Subj: END OF SEASON REPORT- OPERATION COAL SHOVEL 2016/17

Ref: (a) Operation Coal Shovel Standard Operating Procedure, SECDETINST 16150  
(b) Domestic Ice Breaking Operation Policy, COMDINST 16151.1D  
(c) D9 Icebreaking Standard Operating Procedure, D9INST M16150.2B

1. **Summary of Operations:** BRISTOL BAY was assigned to Operation Coal Shovel from 20 December 2016 to 20 March 2017. Over this 91 day period, BRISTOL BAY was underway with tasking on 23 days, in B-12 status 33 days, in B-2 status 10 days and completed 14 days of scheduled maintenance. In total, BRISTOL BAY was underway for 273.5 hours, including seven hours for two direct assists and four vessel escorts, 57 hours preventative icebreaking, and 209.5 miscellaneous hours (transit, ice reconnaissance, training, and SAR). BRISTOL BAY's icebreaking efforts were entirely devoted to Sector Detroit's Operation Coal Shovel, with the exception of our single deployment to the Operation Taconite area of responsibility for testing of a post-SLEP WTGB.
2. **Area of Operations – Operation Coal Shovel:**
  - a. 20-22 Dec. Detroit River/Western Basin of Lake Erie: Conducted track maintenance and ice reconnaissance. Performed direct assist of AVENGER IV/PML 2501 in Detroit River. Reported 20 Canadian aids off station.
  - b. 30-31 Dec. Western Basin of Lake Erie: Responded in ice conditions to SAR case IVO Cleveland Harbor, OH.
  - c. 04 Jan. Lake St. Clair/St. Clair River: Repositioned ATON in Lake St. Clair and hosted Sector Detroit Ice Officer for area familiarization.
  - d. 10 Jan. Detroit River: Enforced security zones for VPOTUS in ice conditions.
  - e. 12-13 Jan. Lake St. Clair/St. Clair River: Underway for ATON reconnaissance and DOMICE training.
  - f. 13-15 Feb. Detroit River/Western Basin of Lake Erie: Conducted flushing operations in Peele Passage.

ENCLOSURE (3)

- g. 22 Feb. Lake St. Clair: Underway for ATON reconnaissance and hoist training with AIRSTA Detroit, MI.
- h. 15 Mar. St. Clair River: Conducted flushing operations at Southeast Bend for anticipated transit of ALGOMA HANSA.
- i. 16 Mar. St. Clair River: Conducted flushing operations at Southeast Bend for anticipated transit of SAMUEL DE CHAMPLAIN.
- j. 18 Mar. Detroit River/Lake St. Clair/St. Clair River: Responded in ice conditions to SAR case IVO Grosse Ile, MI. Conducted ice reconnaissance in St. Clair River.

**3. Area of Operations – Operation Taconite:**

- a. 17-22 Jan. St. Mary's River/Bay of Green Bay: Underway for ice breaking testing of a post-SLEP WTGB. Assisted CGC MACKINAW with direct assist of ANGLIAN LADY. Deployed ice rescue team to assist ANT Sault Ste. Marie working Round Island light. Conducted successful ice breaking testing in Bay of Green Bay.

**4. Engineering:** BRISTOL BAY did not lose any operational days due to engineering discrepancies. We did, however, utilize this lighter-than-average ice season and two weeks of scheduled Charlie to conduct significant repairs to the barge hydraulic system and lingering post-SLEP issues. We hosted the MAT team, the SFLC Assist Team, Great Lakes Ship Yard, and IPF Detroit to resolve these issues. By the end of the season, our barge was completely operational.

**5. Commercial Icebreaking:** Not applicable. We did not conduct any operations with commercial icebreakers.

**6. Effects on Other Missions:** We conducted many ATON reconnaissance missions throughout the season due to the unexpected ice formations both early on and late into the season. Many local aids were moved off station including six of our primary aids. Without an operational barge, we were unable to return these aids to their assigned positions. We were, however, able to tow many of the discrepant aids into the channel for other cutters to work. The ice season did not affect our timely launch of Operation Spring Restore.

**7. Public Affairs:** BRISTOL BAY was not involved in any significant media events. We did, however, maintain our Facebook page with images conveying our ice breaking story.

**8. Recommendations/Comments:** Recommend Sector Detroit continue to use every authority available to appropriately delay and convoy vessels as soon as significant ice forms in the lower St. Clair River. Tug and barge combinations should especially be restricted in their transit.



Subj: END OF SEASON REPORT- OPERATION COAL  
SHOVEL 2016/17

16155  
01 May 2017

#

Copy: CGD NINE (dpw)  
CG SECTOR Sault Ste. Marie  
AIRSTA Detroit  
USCGC MACKINAW  
USCGC ALDER  
USCGC HOLLYHOCK  
USCGC MOBILE BAY  
USCGC NEAH BAY  
USCGC BISCAYNE BAY  
USCGC KATMAI BAY  
USCGC MORRO BAY



16155  
19 May 2017

## MEMORANDUM

From:  Charles Kelly, LT  
USCGC MORRO BAY (WTGB 106)

To: CG SECTOR Detroit  
CG SECTOR Sault Ste Marie

Subj: END OF SEASON DOMESTIC ICEBREAKING REPORT - 2016/17

Ref: (a) Domestic Icebreaking Operation Policy, COMDTINST 16151.1D  
(b) Ninth District Domestic Icebreaking Policy and Procedures, D9INST M16150.3  
(c) Operation COAL SHOVEL Standard Operating Procedure, SECDETINST 16150  
(d) Operation TACONITE Incident Action Plan 2016-17

**Summary of Operations:** MORRO BAY began icebreaking duties on 19 December, before Operation Coal Shovel was begun, and was assigned to Operation Coal Shovel from its commencement on 20 December until 02 March when we shifted to Operation Taconite. We were assigned to Operation Taconite from 02 March until 30 March. During the ice season, we had three weeks of scheduled Charlie during the weeks of 26 December, 13 February, and 20 February and no unscheduled Charlie was required. Throughout the ice season, MORRO BAY primarily operated in Lake Erie, the Detroit River, the Saint Mary's River, and Whitefish Bay and accumulated 719 hours breaking ice including eight direct assists.

### 1. Area of Operations

#### a. Operation COAL SHOVEL

(1) 19 Dec. Detroit River/Western Basin of Lake Erie: Sailed overnight to the Western Basin of Lake Erie to stand by for possible escort duties in the vicinity of Toledo, OH.

(2) 26 Dec-01 Jan. Homeport: Charlie period.

(3) 08 Jan. Sandusky Harbor: Conducted breakout of M/V Manitoulin and track maintenance in the turning basin, around the harbor race track, and through Moseley Channel.

(4) 10-12 Jan. Western Basin of Lake Erie/Pelee Pass: Conducted track maintenance and stood by for escort duties.

(5) 27 Jan. Detroit River/Western Basin of Lake Erie/Pelee Pass: Conducted escorts of the M/V Avenger/PML 2501 and M/V Karen Andrie from the ice edges between Pelee Pass and the Detroit River.

ENCLOSURE (4)

(6) 02 Feb. Western Basin of Lake Erie: Completed a training trip highlighted by hoist training with two separate helicopter crews from AIRSTA DETROIT.

(7) 13-27 Feb. Homeport: Charlie period.

(8) 28 Feb. Departed homeport for Operation TACONITE.

b. Operation TACONITE

(1) 02 Mar. Lower St. Mary's River: Shifted TACON to Sector Sault Ste Marie (SSM) for Operation TACONITE.

(2) 03 Mar. Lower St. Mary's River: Conducted track maintenance from Lime Island to Sector SSM.

(3) 04-06 Mar. Lower St. Mary's River: Commenced flushing ops between Detour Village and Lime Island.

(4) 07 Mar. Straits of Mackinac: Conducted escort of the M/V Samuel De Champlain from the Mackinac Bridge west to ice edge near Squaw Island.

(5) 09-14 Mar. Lower St. Mary's River: Continued flushing ops in the lower river.

(6) 17 Mar. Soo Locks: Locked through to the Upper Saint Mary's River and Whitefish Bay. Commenced track grooming in Upper St. Mary's River.

(7) 18-22 Mar. Upper St. Mary's River/Whitefish Bay: Continued track grooming and flushing ops working in tandem with CGC MACKINAW.

(8) 23 Mar. Upper St. Mary's River/Whitefish Bay: Escorted upbound M/V Manitoulin from Leigh Bay through Whitefish Bay to Lake Superior.

(9) 24 Mar. Upper St. Mary's River/Whitefish Bay: Escorted downbound M/V Philip R Clarke and M/V Roger Blough through Whitefish Bay to lock wall in preparation of lock opening.

(10) 25 Mar. Upper St. Mary's River/Whitefish Bay: Locks opened to commercial traffic at 0001 local. Continued grooming of the Upper Saint Mary's River and Whitefish Bay.

(11) 26 Mar. Whitefish Bay: Continued grooming of Whitefish Bay. Conducted midnight, direct assist of the beset M/V Tim S. Dool at the mouth of Whitefish Bay to Lake Superior.

(12) 29 Mar. Soo Locks/Lower St. Mary's River: Locked down to conduct personnel transfer of CAPT Broz from the M/V James R. Barker then disembarked him to Sector

SSM before locking back up to Whitefish Bay to clear shore ice that was breaking away and impeding the channel.

(13) 30 Mar. Released from Operation TACONITE, shifted TACON to District Nine. Commenced transit to homeport.

c. Total Underway Hours: 831 hours

(1) Direct Assist: 52 hours

(2) Vessel Assist: 149 hours

(3) Preventative Icebreaking: 168 hours

(4) Miscellaneous: 350 hours

(5) Open Water: 112

**Engineering:** Morro Bay experienced one major casualty throughout the season. Bank two of our two bank water mist system began to energize inadvertently. Watch standers were able to halt the system from discharging but some pressure was lost in each of the bank two bottles. The system was reduced by approximately 15% but was deemed safe to sail and an inspection was scheduled for a future Charlie period. We also experienced several minor mechanical and navigational equipment casualties that were corrected quickly by ship's force, including a recurrent high crankcase pressure found to be caused by a faulty start air valve. Several other minor casualties to bridge systems were corrected by the Sector SSM ESD and the ground work was laid for us to prototype a new Seawatch system for monitoring VHF CH13/16. Overall, no operational days were lost to equipment casualties.

**2. Commercial Icebreaking:** Commercial Ice Breaking was not observed.

**3. Effects on Other Missions:**

a. There were no negative impacts to our other assigned missions. Our primary mission of icebreaking was positively impacted and having seen all types of icebreaking in the St. Mary's River and Whitefish Bay, I am confident the crew is well prepared to take on next year's ice despite limited previous knowledge.

b. We embarked an IS3 from the District Nine Intelligence Office to sail with us for the final few days of the season which provided him ample AOR familiarization to be utilized in the tactical planning that his office conducts.

**4. Public Affairs / Recreational Users:**

a. We encountered very few snowmobiles or ice fishermen on the Saint Mary's River and all maintained a safe distance from the cutter's operations and established tracks.

b. We were not involved in any Public Affairs but did embark a member of the Sector SSM Command Center and her family during our initial lock up to the Upper St. Mary's River.

**5. Recommendations/Comments:**

a. Constant communication between all parties (Soo Traffic, commercial traffic, and on scene cutters) in Whitefish Bay led to excellent track recommendations to commercial traffic transiting the area at all times of the day.

b. Ice reconnaissance flights were less important this year than during past seasons, but personnel with longevity in the District (ie. Auxiliarists, civilian employees, etc.) could be well utilized during times of heaviest ice to recommend tracks for escorts. (Assuming they are well versed in ice formations following familiarization trips spent on cutters.)

c. I would like to thank Sector SSM's staff involved with Op Taconite as well as all the support team members including the ET and IT shops who assisted us throughout our time assigned there. There was no hour too late for them to work and no day that could not be made a work day. I felt like we were truly their focus while they completed any repair we needed and I heard no complaints about them working around the cutter's schedule. Thank you to CAPT Broz, Mark Gill and the rest of the Sector SSM personnel.


#

Copy: CGD NINE (dpw)  
CG SECTOR SAULT STE MARIE  
CG SECTOR DETROIT  
AIRSTA DETROIT  
USCGC MACKINAW  
USCGC ALDER  
USCGC HOLLYHOCK  
USCGC BRISTOL BAY  
USCGC MOBILE BAY  
USCGC NEAH BAY  
USCGC BISCAYNE BAY  
USCGC KATMAI BAY



16155  
10 May 2017

## MEMORANDUM

From:   
M. K. Waters, LCDR  
CGC HOLLYHOCK (WLB-214)

Reply to: LTJG R. G. Montvydas  
Attn of: 216-310-6530

To: CG SECTOR DETROIT

Subj: OPERATION COAL SHOVEL END OF SEASON ICEBREAKING REPORT 2016-2017

Ref: (a) Ninth District Domestic Icebreaking Policy and Procedures, D9INST M16150.3

1. Summary of Operations: The early onset of ice in late November and early December caused us to work many of our buoys in ice. The ice, while significant throughout Lake St. Clair and the Western Basin, was not a hindrance to navigation and thus we did not chop into COAL SHOVEL. Warmer temperatures caused all the ice to deteriorate throughout the spring until one last freeze occurred in March. The ice formed off Goderich and broke free from the shoreline and floated down the St. Clair River for approximately two weeks. During those two weeks, we chopped to Operation Coal Shovel and conducted flushing ops in the vicinity of SE Bend to ensure no ice jams formed to prevent flooding hazards and navigational blockages. Our efforts, in conjunction with CGC BRISTOL BAY and CCGS SAMUAL RISLEY were effective in re-establishing the low of the river and moving ice down into Lake St. Clair to prevent any blockages as the ice deteriorated.

### 2. Area of Operations

a. Operation COAL SHOVEL: CGC HOLLYHOCK chopped to Sector Detroit in support of Operation COAL SHOVEL from 20 March to 29 March. During the period we were chopped in support of ice operations we focused our efforts from Marine City, south to Lake St. Clair.

#### (1) Operational Hours:

##### (a) Alpha:

1. Direct Assist and Vessel Escort hours: 0 hours.
2. Preventative and Transit hours: 81 hours.
3. Miscellaneous hours: 65 hours.
4. Total underway hours: 146 hours.

(b) Bravo: 70 hours.

(c) Charlie: 0 hours.

ENCLOSURE (5)

3. Chronology of Key Events:

a. 05 Mar to 08 Mar: HOLLYHOCK was underway ISO Operation TACONITE supporting the Employer Support of the Guard and Reserve (ESGR) event at CG Station St. Ignace.

b. 16 Mar: HOLLYHOCK commenced ice breaking in the St. Clair Flats canal at 1000. After two flushes of the Flats canal HOLLYHOCK proceeded north to decommission five Aids to Navigation (AtoN).

c. 20 Mar to 29 Mar: HOLLYHOCK in-chopped to Operation COAL SHOVEL and decommissioned seven AtoN due to ice flowing down the St. Clair River. HOLLYHOCK then proceeded to conduct flushes of the St. Clair Flats canal with the assistance of CGC BRISTOL BAY and monitored the flow of the ice in the river.

4. Engineering:

a. HOLLYHOCK did not have any engineering issues that effected icebreaking operations or were a result of ice ops.

5. Logistics:

a. Due to the close proximity of operations to homeport, logistics were no issue during ice operations.

b. Fuel: HOLLYHOCK did not procure any fuel in direct support of ice operations.

6. Commercial Icebreaking: HOLLYHOCK encountered no commercial icebreaking resources.

7. Public Affairs Events:

a. The HOLLYHOCK supported the Employer Support of the Guard and Reserve (ESGR) annual event in St. Ignace, MI. The event was highly successful with attendees extremely thankful for the opportunity to connect with and experience the lifestyle of a uniformed service member. Although this event requires a significant time investment by HOLLYHOCK considering the transit distances, the WLBs and MACKINAW remain the only viable assets to host the large number of attendees.

8. Recommendations:

a. St. Clair River Cameras: As an international border, the St. Clair River is inundated with camera coverage providing real-time imagery of the ice conditions and vessel traffic. While this equipment is otherwise purposed to support law enforcement and border security, the capacity to enhance situational awareness of the Tactical Commander and icebreaker is significant. I most strongly recommend partnering with our local Law Enforcement agencies to gain access to the feed from this equipment, and if possible, making it available to the operational units on scene.

b. Ice Officer Ride Along: The domestic icebreaking mission is extremely dynamic and the waterways we service are as complex as any. The diversity of vessel capabilities and that of their masters, as well as the intricacies of this mission, cannot be effectively learned and understood through message traffic and conference calls. I strongly encourage development of a ride along program for all current and future ice officers.

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REPORT 2016-2017**

**16155  
10 May 2015**

**#**

**Copy: CGD Nine (dpw)  
CG SECTOR SAULT STE MARIE  
CGC MACKINAW  
CGC ALDER  
CGC MOBILE BAY  
CGC BRISTOL BAY  
CGC BISCAYNE BAY  
CGC NEAH BAY  
CGC KATMAI BAY  
CGC MORRO BAY**



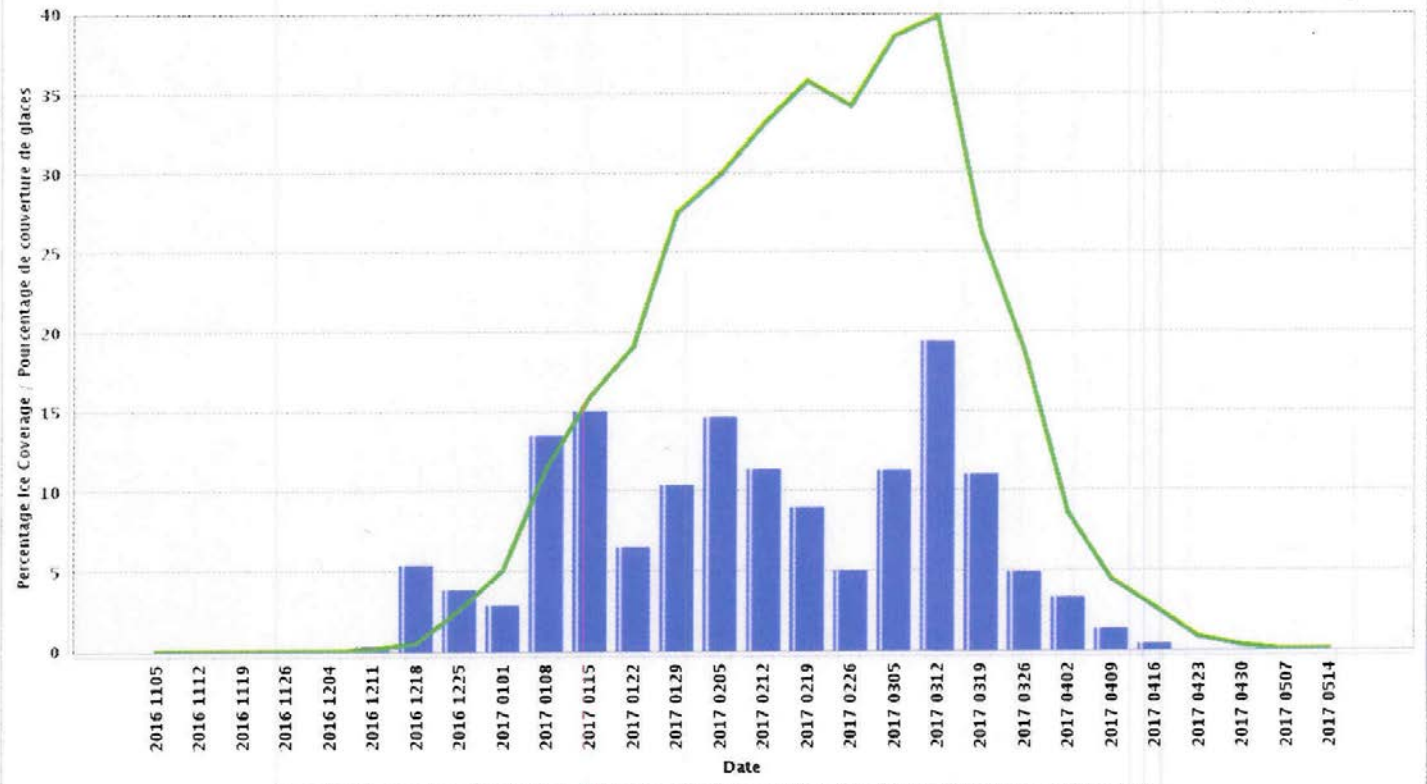


**Single Season: Weekly Ice Coverage for the season  
2016/17, Weeks: 1105-0514**

**Une saison: Couverture des glaces hebdomadaire pour la  
saison 2016/17, Semaines: 1105-0514**

Regional Great Lakes /  
Régionale Grands Lacs

Area / Aire : 254,680 km<sup>2</sup>



Canadian Ice Service - Environment Canada / Service canadien des glaces - Environnement Canada  
 (2017-05-09 11:12 IceGraph - Canadian Ice Service/Graphe des glaces - Service canadien des glaces 2.0.7 2014/01/21)  
 ■ Ice Coverage / couverture des glaces ■ No Data / Aucune donnée — Median / médiane 1980/81-2009/10

**Single Season: Weekly Ice Coverage  
Compared to the Median (1981-2010)  
Chart produced by the Canadian Ice Service**

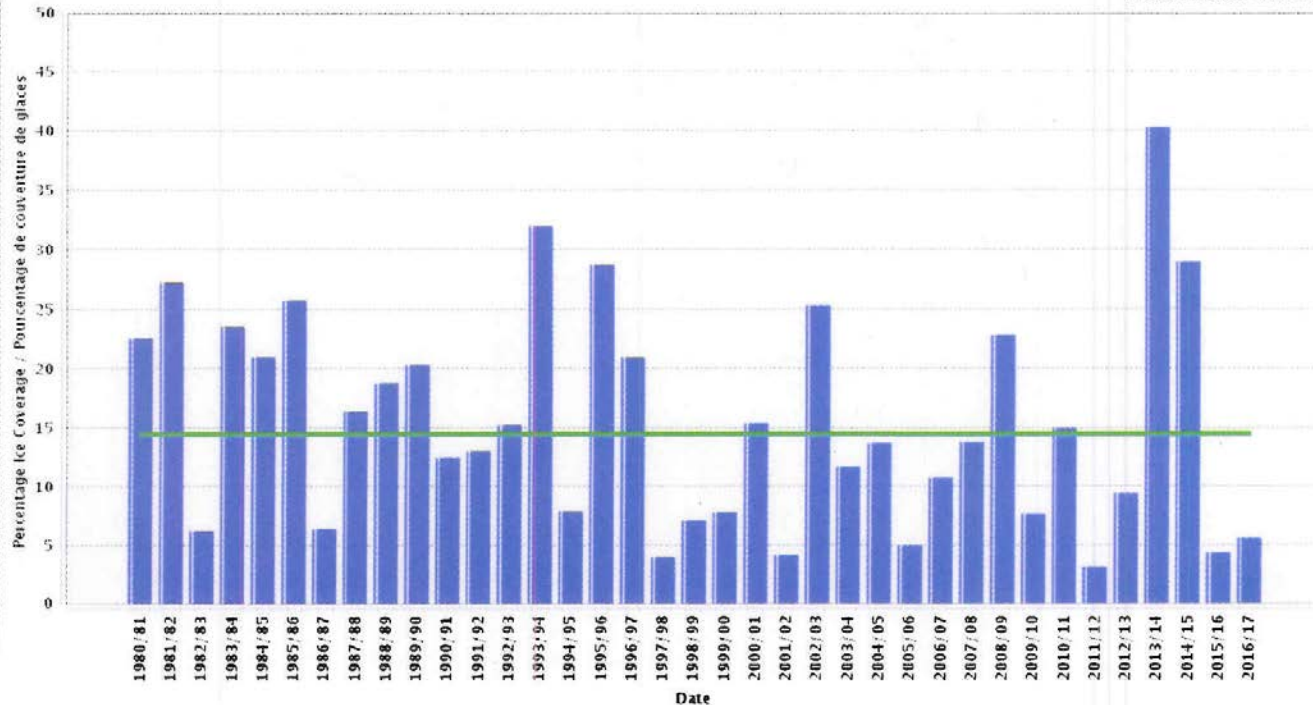


**Historical Total Accumulated Ice Coverage (TAC) for  
the weeks 1105-0507, seasons:1980/81-2016/17**

**Total accumulé de la couverture des glaces historique  
(TAC) pour les semaines 1105-0507,  
saisons:1980/81-2016/17**

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Régionale Grands Lacs

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■ Ice Coverage / couverture des glaces ■ No Data / Aucune donnée — Median / médiane 1980/81-2009/10

**Great Lakes Total Accumulated Ice Coverage 1980-2017**  
Chart produced by the Canadian Ice Service