

OPERATION NUNALIVUT 2018



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GENERAL

Joint Task Force North (JTFN) will conduct Operation NUNALIVUT 2018 (Op NU 18) from 23 February to 19 March, 2018, based out of Resolute Bay and Cambridge Bay, Nunavut (Fig 1). The overall aim is to further enhance the Canadian Armed Forces' (CAF) knowledge and capacity to operate in austere locations and challenging environments, while allowing the CAF to demonstrate their ability to effectively respond to safety and security issues in the Arctic.

NUNALIVUT 2018

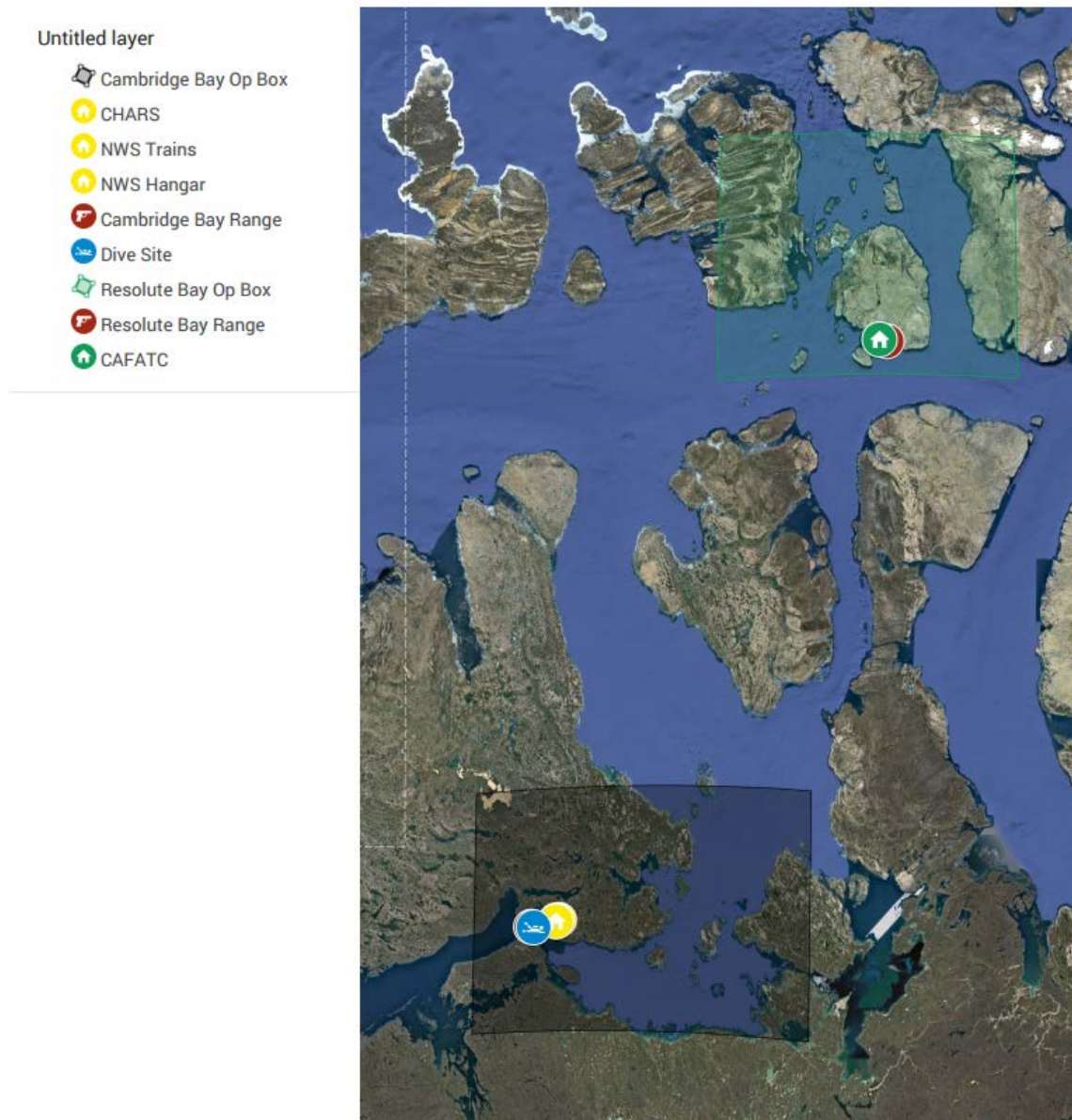


Fig 1. Area of Operation for Op NU 18

Op NU 18 will be conducted with patrols on the land, on the sea ice, underwater, and in the air. It will consist of approximately 300 CAF personnel, and may be observed by international partners. To facilitate the conduct of Op NU 18, JTFN will establish a Task Force Headquarters in Cambridge Bay consisting of approximately 20 members with an additional 40 support personnel.

Near Cambridge Bay, a Canadian Army platoon and Royal Canadian Navy (RCN) dive team will be supported by members of 1 Canadian Ranger Patrol Group (1 CRPG) for a total of approximately 90 personnel. Patrols and diving operations will be performed on the sea ice. A live fire exercise is planned to be conducted on the sea ice.

In Resolute Bay, a Canadian Army company will be supported by members of 1 CRPG for a total of approximately 90 personnel. Patrols will be performed on the sea ice to the in the vicinity of Resolute Bay, conducting training in arctic survival skills. A live fire exercise is planned to be conducted on the sea ice.

CC-177 (Globemaster), CC-138 (Twin Otter), CC-130 (Hercules), and CH-146 (Griffon) aircraft, along military helicopters based in Cambridge Bay will provide transportation, resupply and casualty evacuation services if required (Table 3).

LAND BASED EXERCISES

On approximately 1 March, a Canadian Army company supported by 1 CRPG will perform patrols from Resolute Bay by snowmobile. Patrols up to 6 days in durations will occur over a 20 day period from 01 to 19 March 2018. Patrols will consist of up to 90 personnel. Specific patrol routes will be identified to be utilized based on weather, ice conditions, and wildlife. The patrol routes will be defined closer to the date of the operation however flexibility will be maintained. Bivouacs may be established. The locations and pictures of bivouacs will be recorded for each location used.

Concurrently, a Canadian Army company and RCN dive team supported by 1 CRPG will establish a camp (Fig 3) in the vicinity of Cambridge Bay on the sea ice. The camp will be operational from 03 to 17 March 2018. The camp will consist of up to 120 personnel.

While not currently planned, live fire exercises may be conducted at 74.70244, -94.76506 in the vicinity of Resolute Bay (Fig 4) and at 69.04162, -105.91232 in the vicinity of Cambridge Bay (Fig 5) during the 4 to 19 March 2018 timeframe. Weapons to be used during the live fire include the C7 (5.56mm rifle), C9 (5.56mm machine gun), .303 Lee Enfield and C6 (7.62mm machine gun) (Table 3). It is important to note the CAF conducts ranges in an extremely safe manner through the designation of a Range Officer in charge, Range Safety Officer and additional Range Staff as required, based on the level of

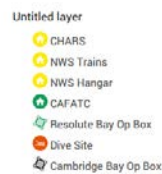


Fig 2. Resolute Bay Op Box.

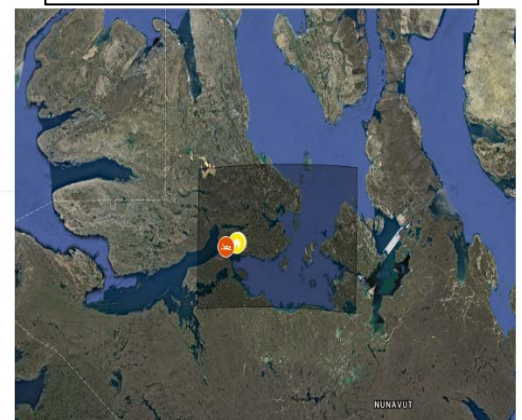
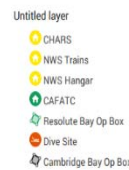


Fig 3. Cambridge Bay Op Box.

the range. The Range Staff will ensure the area is free of personnel, wildlife, aircraft, or any other objects prior to conducting the range. They will ensure the range remains safe during its conduct and ensure all waste produced by the range is removed immediately.



Fig 4. Cambridge Bay locations.



Fig 5. Resolute Bay Locations.

AIR OPERATIONS

At this time the composition of the air task force supporting Operation NUNALIVUT 18 is uncertain. It will likely involve CC-177, CC-130, CC-138 and CH-146 aircraft from the Royal Canadian Air Force (RCAF), and will potentially involve contracted helicopter support. Cambridge Bay will be the main source of support for air operations with some assets operating out of Resolute Bay.

INTERNATIONAL PARTICIPATION

At this time, international participation within Op NU 18 is likely; a small number of international military members may observe the operation.

ENVIRONMENTAL CONSIDERATIONS

The Polar Bear Pass National Wildlife Area lies to the west of the planned Op NU 18 and will be avoided by all military activities.

All activity conducted in this area is assessed as low impact and any wildlife sightings will be recorded and reported.

It is important to note the Department of National Defence/Canadian Armed Forces operates under strict environmental guidelines. In and out clearances will be conducted at each location used for resupply or bed down. Digital images of locations will be taken during and after use and will be included in the Post-Operation In/Out Clearance Report. Some of the environmental protection measures will be implemented include:

The permitting process requires detailed information regarding the nature and locations of the operation, and the information contained in the following document is all known information at the time of production. Minor variances may occur during the conduct of the operation. Such variances will be captured in a post-operation Environmental Report and will include the precise locations used during the operation, along with an overall review of the execution.

The following is a list of potential impacts which could result from the proposed activities:

- Activity and vehicle traffic from the proposed activities is expected to increase ambient noise levels and may also cause minor disturbance to the wildlife within the vicinity of activity locations. However, since all activities will be temporary, impacts are expected to be minimal.
- Vehicles involved in Op NU 18 will release particulate into the atmosphere and contribute to greenhouse gas emissions. Air quality in the vicinity of activities may be temporarily reduced due to the increased fumes. However, due to the relatively short duration of the activity, and the use of new, lower emission vehicles, impacts to the atmosphere are expected to be minimal.
- Despite direction to ensure all waste material is to be properly contained and transported back for disposal, the potential exists for waste material produced during Op NU 18 to litter property or be windblown onto surrounding locations. However, every effort will be made to ensure this does not happen; therefore, the impact is considered to be easily mitigated and insignificant.
- Should a fuel leak and/or spill occur from vehicles, equipment, etc, the possibility exists for contamination of ground water resources, soil and/or surface water. However, all units traveling outside Resolute Bay or Cambridge Bay will have spill cleanup supplies, and will be instructed on their use; therefore, the potential for a malfunction and/or accident to cause any significant impact is low.
- Peary Caribou are an endangered species and live in the vicinity of Resolute Bay. Dolphin and Union Caribou are a species of special concern and live in the vicinity of Cambridge Bay. Human activities have the potential to disturb these animals, however any caribou seen will be avoided minimizing the potential disturbance of any individual caribou or caribou herds.

While there is potential for activities to impact the environment, mitigation measures have been established to minimize their significance. These mitigation measures include, but are not limited, to:

- An environmental brief will be provided to personnel involved in the exercise to ensure they have the required general level of environmental awareness and knowledge, and are aware of requirements related to wildlife prevention, response and reporting.
- Vehicle movement will be restricted in sensitive areas. In the event established trails are impassable, personnel will be instructed to use alternate routes for as limited a distance as necessary.
- Individuals will be tasked to ensure waste material and litter is collected on the site prior to departing the camp location. All waste produced on site will be packed out to Resolute Bay or Cambridge Bay for proper disposal.
- In order to prevent any unnecessary wildlife encounters, all waste will be appropriately contained, stored and removed from the sites as soon as possible.
- All caribou will be avoided and not disturbed in any way.
- Personnel will keep at least 1 km away from the boundary of the Polar Bear Pass National Wildlife Area.
- Personnel will be made aware of the potential for threats from local wildlife and instructed to avoid encounters or disrupt any wildlife unless absolutely necessary.

- Local treatment systems and municipal landfill or incineration will be used for the disposal of human waste. Waste generated during foot patrols or when municipal services are otherwise unavailable, will be bagged and packed out for appropriate disposal;
- Local landfill or incineration will be used for the disposal of combustible waste. Disposal will occur in accordance with territorial and municipal regulations (waste will be handled by contract);
- Local landfill, incineration or recycling centers, where available, will be used for the disposal of non-combustible wastes. Disposal will occur in accordance with territorial and municipal requirements (waste will be handled and disposed by contract);
- All noise making activities will be limited as much as possible.
- Vehicles and equipment will be maintained in good repair to prevent leakage of fuel, oil, etc.
- Generators will be placed within suitable containment throughout the operation, and will be emptied for transportation;
- When in Resolute Bay or Cambridge Bay, all vehicle/equipment refueling will occur in a central location.
- Use of spill containment items including drip pans or mobile plastic berms will be maximized during refueling.
- All fuel storage systems and containers to be used in Op NU 18 will be transported, stored, protected, etc. according to proper legislation, regulation, codes and guidelines.
- All hazardous materials (HAZMAT) and fuel will be stored in approved storage containers and facilities, including compliant secondary containment and will be stored in accordance with municipal, territorial, and federal regulations;
- HAZMAT prevention/response resources (spill pans, hydrocarbon spill pads, absorbal, etc.) will be available and ready for use if required. Spill kits will be specifically located at all fuel storage areas, vehicle maintenance areas and refueling areas.
- All hazardous materials (HAZMAT), fuel storage, generator and vehicle parking areas are subject to inspection by environmental support staff. All involved elements will appoint an environmental representative, accountable for the supervision of best environmental practices;
- HAZMAT waste will be appropriately packaged and transported to a suitable facility for disposal, in accordance with appropriate regulations – provided by a third party waste disposal facility if required; and,
- Photographs will be taken of all training location sites, and temporary camp locations before, during and after use.

Based on all of the information available regarding the proposed Op NU 18 and the surrounding environment, if designed and carried out using the knowledge of the local I CRPG members in to addition to the identified mitigation measures, and follow-up programs and monitoring, Op NU 18 is not likely to cause any significant effect on the environment.

LOCATIONS

Table 1. Op Box Coordinates, OP NU 18

Op Box Corner Coordinates			
OP Box	Corner	Latitude (DD)	Longitude (DD)
Cambridge Bay Op Box	S/W	67.670859	-107.7844
	S/E	67.670859	-96.511747
	N/W	70.505868,	-107.7844
	N/E	70.505868,	-96.511747
Resolute Bay Op Box	S/W	74.303565	-99.871299
	S/E	74.303565	-90.692298
	N/W	76.255593	-99.871299
	N/E	76.255593	-90.692298

CAMP DETAILS

OP NU 18 HEADQUARTERS AND PATROL BASE – Cambridge Bay

It is prudent to note the establishment of the main camp in Cambridge Bay. All Op NU 18 personnel will be sleeping in DND, or contracted facilities. Temporary structures may be erected for work space, storage, and dining facilities.

OP NU 18 DIVE TEAM – Cambridge Bay

The Op NUNALIVUT 18 Dive Team will consist of 20 personnel from the RCN. They will be supported by approximately 40 members of 1 CRPG and other RCN support personnel. They will be staying at the dive camp. Tents will be constructed in the vicinity of the dive site(s) for operation operational work. The dive site will be supported by fixed and rotary wing aircraft landing at an appropriate distance from the site.

PERSONNEL

Table 2. Estimated number of person-days (number of people per day multiplied by the number of days).

Personnel on the Land	February 2018	March 2018		Total Man-days
	23-28	01-19	19-25	
Cambridge Bay	30	150	30	3360
Resolute Bay	30	150	30	3360

RANGE EXERCISE AMMUNITION TO BE USED

Table 3. Ammunition to be used.

Type	Quantity
.303 Cal	600
5.56mm	30000
7.62mm	3000

FUEL AND HAZMAT INVOLVED

Table 4. Fuel used during the operation.

Location	Diesel (BV 206, Generators, Heaters)	Gasoline (LOSV)	Naptha (Colman Stove and lanterns)	Oil (LOSV)	AV-Gas (Aircraft)
Cambridge Bay	Up To 5000L (stored in 205L drums)	Up to 5000L (stored in 205L drums)	20L (stored in 5L containers)	200L (stored in 5L containers)	Fuel to be delivered to aircraft by contract
Resolute Bay	820L (stored in 205L drums)	410L (stored in 205L drums)	N/A	50L (stored in 5L containers)	Fuel to be delivered to aircraft by contract

As part of OP NU 18, a fuel cache of up to 10000L will occur at the dive site.

MAJOR EQUIPMENT INVOLVED

Table 5. Major equipment operating Op NU 18.

Equipment type and number	Size – dimensions	Proposed use	Location
2 x BV206	L5.72m/W2.01m/H2.72m/Wt:8,500kg	Transportation of troops and equipment	Resolute Bay
90 x Light Over Snow Vehicles (LOSV) With Qamutiik	L3.00m/W1.30m/H1.20m/Wt140kg	Transportation of troops and equipment	Resolute Bay and Cambridge Bay
20 x Heaters	Example Dimensions: L4.24m/W2.75m/H1.20m	Heating tents	Resolute Bay and Cambridge Bay
2 x 5kW Generator	Example Dimensions: L4.0m/W3m/H.2m	Temporary power	Resolute Bay and Cambridge Bay
1 x CH – 146 Griffon	L 17m/W 14m/H 4.6m/Wt 5,355 kg	Transportation of troops and equipment	Cambridge Bay
3 x CC-138 Twin Otter Aircraft	L15.1m/W9.81m/H5.66m/Wt5,600kg	Transportation of troops and equipment	Cambridge Bay

CC-130 Hercules	L30m/W40m/H11m/Wt34,400kg	Transportation of troops and equipment	Resolute Bay and Cambridge Bay
CC-177 Globemaster	L53m/W52m/H17m/Wt128,100kg	Transportation of troops and equipment	Cambridge Bay
1 x Compression Chamber	L2.1m/W1.3m/H2.0m/Wt2,300kg	Safety in case of diver nitrogen poisoning	Cambridge Bay

WATER AND WASTE

Table 6. Wastes produced and methods of disposal

Type of waste	Projected amount generated	Method of Disposal	Additional treatment procedures
Water consumption	1000L/Day	Municipal services	Contracted from community sources
Sewage (human waste)	100 Lbs/day	Human waste produced in the field will be collected (bagged) and shipped south for proper disposal.	Nil
Greywater	100 Lbs/day	Greywater produced at temporary camp sites, is anticipated to be minimal where use of water will be mostly for personal consumption (drinking and cooking). Greywater produced at Cambridge Bay and CAFATC will be disposed of via existing infrastructure.	Nil
Combustible wastes	100 Lbs/day	All combustible waste produced in the field will be returned to the nearest settlement for proper disposal by contract.	Nil
Non-Combustible wastes	100 Lbs/day	All non-combustible waste produced in the field will be returned to the nearest settlement for proper disposal by contract.	Nil
Hazardous waste	TBC	All hazardous waste will be shipped to larger urban centers for proper disposal by qualified operators.	Nil

INUIT OWNED LAND PARCELS

Parcels of Inuit Owned Land in the vicinity of Resolute Bay and Cambridge Bay may be directly or indirectly impacted during the conduct of OP NU 18, or similar military activities from 23 February to 19 March 2018. Agreement for the use of Inuit owned lands being used will be put into place.

CONCLUSION

The information provided is the most accurate information available at this time, and dates and locations may change slightly due to unpredictable circumstances such as weather. Regardless of circumstance, the CAF is accountable to environmental stewardship, and will conduct the operation with due diligence towards the environment.