

The Climate and Environmental Impacts of the Canadian and American militaries

- Climate impacts of military operations
- Environmental impacts of military bases
- Military expenditures
- What are the solutions?

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The Climate and Ecological Crisis

- Flooding, forest fires, and heat waves
- Worsening air pollution
- Increasing deforestation, desertification & droughts
- Increasing ocean acidification and marine plastic pollution
- Oceans suffocating as huge dead zones increase from 50 in 1950 to 500 today
- Increasing biodiversity loss
- Species extinction
- Hitting planetary boundaries

Resource: <https://climate.nasa.gov/>

Climate change

World 'nowhere near on track' to avoid warming beyond 1.5C target

Exclusive: Author of key UN climate report says limiting temperature rise would require enormous, immediate transformation in human activity

Oliver Milman

@olliemilman

Thu 27 Sep 2018 06:00 BST



2,704



▲ Avoiding a temperature increase of more than 1.5C will be 'extraordinarily challenging', says the report's author. Photograph: Matt Brown/AP

The world's governments are "nowhere near on track" to meet their commitment to avoid global warming of more than 1.5C above the pre-industrial period, according to an author of a key UN report that will outline the dangers of breaching this limit.

A massive, immediate transformation in the way the world's population

Military Emissions

- US Dept. of Defense (DOD) largest institutional consumer of oil (\$17B/year) & largest landholder w/ 800 bases in 70 countries
- Canada's Dept. of Defence (DND) largest consumer of petroleum and largest landholder among all federal agencies
- Military vehicles inefficient, long life-cycles and locked-in
- Military emissions are exempted from national greenhouse gas reporting requirements and reduction targets

- Home IPCC
- IPCC-TFI Home
- Organization
- Publications
- Wetlands Supplement
- KP Supplement
- 2006 IPCC Guidelines
- GPG-LULUCF
- Degradation of Forest
- GPG2000
- Revised 1996 IPCC Guidelines
- Technical Bulletins
- Presentations
- Support to Inventory Compilers
- Inventory Software
- Meetings
- FAQs
- Links
- Emission Factor Database (EFDB)
- Electronic Discussion Group (EDG)

Publications

2006 IPCC Guidelines for National Greenhouse Gas Inventories

- 2006 IPCC Guidelines Top
 - Vol.1 GGR
 - Vol.2 Energy
 - Vol.3 IPPU
 - Vol.4 AFOLU
 - Vol.5 Waste
- Other Language Versions:
 - Arabic
 - Chinese
 - French
 - Russian
 - Spanish

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2006 IPCC Guidelines for National Greenhouse Gas Inventories

- Cover, Foreword and Preface
 - Overview
 - Glossary
 - List of Contributors *1
- *1: Corrected chapter(s) as of April 2007..

The series consists of five volumes:



[Volume 1 General Guidance and Reporting](#)



[Volume 2 Energy](#)



**Former U.S. Under Secretary for the Economy and
Kyoto Protocol lead negotiator, Stuart Eizenstat,
stated before the U.S. Senate in 1998:**

We took special pains, working with the Defense Department and with our uniformed military, both before and in Kyoto, to fully protect the unique position of the United States as the world's only super power with global military responsibilities. We achieved everything they outlined as necessary to protect military operations and our national security. At Kyoto, the parties, for example, took a decision to exempt key overseas military activities from any emissions targets, including exemptions for bunker fuels used in international aviation and maritime transport and from emissions resulting from multilateral operations.



CF-18 Fighter Jet used in Operation Inherent Resolve -Operation IMPACT
Canada bombing of Iraq and Syria from Oct. 2014-Feb. 2016
Canada re-fuelling US-led coalition since 2014 to present



National Defence and the Canadian Armed Forces



Canada

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- CAF Community

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- Army
- Air Force
- Defence Home

Operation IMPACT

Operation IMPACT began as the Canadian Armed Forces (CAF) support to the Global Coalition to degrade and ultimately defeat Daesh in Iraq and Syria. The coalition has been effective. The CAF is continuing to work with partners in the region to set the conditions for stability and security.

Under this mission, the CAF:

- [conducts air operations](#)
- [provides training and assistance to the Iraqi security forces](#)
- [helps regional forces build their capacity](#)
- [provides medical services to Coalition forces](#)
- [supports the Coalition with highly-skilled CAF members](#)

Information: Aircraft sorties

As of September 23, 2018, Air Task Force-Iraq has flown 4698 sorties*:

- CC-150T Polaris aerial refueller flew 1106 sorties. It delivered nearly 63 100 000 pounds of fuel to Coalition aircraft; and
- CC-130J Hercules aircraft flew 1333 sorties. It delivered some 7 672 900 pounds of cargo.

Definition - sortie: in air operations, a sortie refers to an operational flight by one aircraft. A sortie starts when one aircraft takes off and ends when it lands.

*This total includes 1378 sorties flown by CF-18 Hornets. They flew between October 30, 2014 and February 15, 2016. It also includes 881 sorties flown by a CP-140 Aurora. It flew between October 30, 2014 and December 11, 2017. For security reasons, we do not communicate the number of sorties flown by the CH-146 Griffon helicopters.

News

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[New construction breaks ground at the Operational Support Hub – South West Asia](#)

[Link to External Site / March 29, 2018](#)

[Canadian Armed Forces trains, delivers non-lethal equipment to Jordanian Armed Forces](#)

[Link to External Site / March 12, 2018](#)

[Extension, Reorganization of staff for Op IMPACT Role 2 Medical Treatment Facilities](#)

“Delivered 63 100 000 pounds of fuel to Coalition aircraft”



OPERATION INHERENT RESOLVE

ONE MISSION, MANY NATIONS

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Coalition Cohesion

Leveraging the full power of the nations in the Coalition to defeat Da'esh.



Combined Joint Task Force - Operation Inherent Resolve Monthly Civilian Casualty Report

By CJTF-OIR PAO | July 26, 2018

PRINT EMAIL 0

SOUTHWEST ASIA-- The Coalition has worked by, with and through partners since 2014 to defeat Daesh in designated parts of Iraq and Syria, liberating nearly 8 million Iraqis and Syrians from Daesh's brutal rule.

Throughout our air and ground campaigns, we have used deliberate targeting and strike processes to minimize the impact of our operations on civilian populations and infrastructure. Our assessments of civilian casualties are transparent, and we hold ourselves accountable through regularly published strike press releases and civilian casualty reports.

We are willing to work with all who bring allegations of civilian casualties to us, and we seek new or additional information or evidence through public sources, eyewitness accounts or self-reports. We have demonstrated willingness to re-assess past cases in the face of new or compelling evidence.

The Coalition conducted a total of 29,826 strikes between August 2014 and end of June 2018. During this period, based on information available, CJTF-OIR assesses at least 1059 civilians have been unintentionally killed by Coalition strikes since the start of Operation Inherent Resolve.

This month's civilian casualty total reflects the re-addition of 15 casualties from a credible report carried in the April 2018 reports that was mistakenly left out of the May 2018 report.

In the month of June, CJTF-OIR carried over 314 open reports from previous months and received 45 new reports. The assessment of 125 civilian casualty reports have been completed. Sixteen reports were determined to be credible, resulting in 105 unintentional civilian deaths, while three were assessed to be duplicate and 106 were assessed to be non-credible. A total of 234 reports are still open.

Credible Reports-- In each of sixteen incidents, the investigation assessed that although all feasible precautions were taken and the decision to strike complied with the law of armed conflict, unintended civilian casualties regrettably occurred.

1. August 23, 2016, near Qayyarah, Iraq, via media report. During a strike on Daesh improvised weapons assembly area, one civilian was unintentionally injured.
2. May 15, 2017, near al-Makef, Raqqah, Syria, via Airwars report. During a strike on Daesh fighting positions and supply routes, two civilians were unintentionally killed.
3. May 29, 2017, near Raqqah, Syria, via Airwars report. During a strike on Daesh VBIED factory, one civilian was unintentionally killed.
4. June 28, 2017, near Raqqah, Syria, via Amnesty International report. During a strike on reported Daesh headquarters and fighting positions near a residential area allegedly caused civilian casualties. Eight civilians were unintentionally killed.
5. July 18, 2017, near Raqqah, Syria, via Amnesty International report. During a strike on reported Daesh fighting positions near a residential area allegedly caused civilian casualties. One civilian was injured and 11 civilians were unintentionally killed.

“The Coalition has conducted 29,826 strikes between Aug 2014 and July 2018”

Airwars

Monitoring and assessing civilian harm from airpower-dominated international military actions. Seeking transparency and accountability from belligerents, and advocating on behalf of affected non-combatants. Archiving open-source casualty reports, and military claims by nations.

Iraq and Syria

30,092

Coalition strikes

14,322

Strikes in Iraq

15,770

Strikes in Syria

1,508

Days of campaign



6,575

Minimum civilians estimated killed by Coalition

108,462



Airdropped bombs and missiles

Question 6: What are the fuel consumption levels and costs for each branch of the CAF: Navy, Army and Air Force for the period 2014-2015?

Answer: The Department does not collect consumption or expenditure data in the format requested (i.e., by the three main branches). Information is collected for DND/CAF as a whole only. There is no segregation of Army, Navy, or Air force data. The Fiscal Year 2014/2015 data for the Department as a whole is as follows:

- Infrastructure: 11.3 million GJ, \$191 million
- Operational Fleets: 9.5 million GJ, \$340 million

Question 7: What are the estimated greenhouse gas emissions for each branch?

Answer: Please see response to question 6 above. According to Fiscal Year 2014/2015 data, the emissions from infrastructure are 745 kilotonnes of CO₂ equivalent and operational fleets is 676 kilotonnes of CO₂ equivalent. This data is based on static greenhouse gas emission factors. Note that the operational fleet data has not been verified for accuracy and completeness.



Question 8: Did DND estimate or calculate the greenhouse gas emissions or climate change impacts or prepare an environmental assessment of its current Operation IMPACT, which is the airstrikes and the refueling of US-led fighter jets [in] Syria and Iraq?

Answer: DND did not estimate or calculate the greenhouse gas emissions or climate change impacts for Operation IMPACT. However, a Strategic Environmental Assessment is conducted for a potential deployed operation when it is presented to the Government for approval. For projects implemented during deployed operations, such as the construction of a deployed camp, an environmental impact assessment is conducted as required by section 68 of the *Canadian Environmental Assessment Act, 2012*, and in accordance with the commensurate departmental protocols. For projects located in the air, DND may not be able to determine if it is likely to cause significant adverse environmental impacts. DND follows Canadian environmental assessment legislation, and in accordance with the North Atlantic Treaty Organization policy reports the legislation of host nations, such as Kuwait and Iraq, when operating in those jurisdictions. This includes reporting on the release of any greenhouse warming compounds, such as halocarbons, if they occur.

“DND did not estimate or calculate the greenhouse gas emissions or climate change impacts from Operation IMPACT”

Question 9: Did DND estimate or calculate carbon dioxide emissions or climate change impacts or prepare an environmental assessment of its participation in RIMPAC 2016, the largest naval exercise on the Pacific Ocean that was held this summer?

Answer: DND did not estimate or calculate carbon dioxide emissions for Exercise RIMPAC 2016. The deployed camp constructed and occupied by the Air Task Force portion of RIMPAC 2016 successfully underwent an environmental impact assessment. In addition, global warming compounds in such scenarios are reported if they are released.



National
Defence

Defense
nationale



CANADIAN
ARMED FORCES



Defence Energy and Environment Strategy

Harnessing energy efficiency and sustainability:
Defence and the road to the future

Canada

CANADA
November
2017

National Defence policy

As the largest user of energy in the Canadian government, National Defence has a key role to play in supporting the government's commitment. The DEES establishes a sound and responsible energy policy for Defence and provides the strategic direction required to support the Defence team in managing energy and environmental considerations on a regular and emerging basis. The DEES also includes activities that support the advancement of the Government of Canada's energy and environmental agenda such as Defence's contribution to the Federal Sustainable Development Strategy.

Defence is the single largest emitter of greenhouse gases in the federal government. In support of the Federal Sustainable Development Strategy, Defence will play a leadership role in reducing its greenhouse gas emissions from both its infrastructure and operational portfolios, where feasible. Under the Federal Sustainable Development Strategy target, DND is committed to a 40% reduction below 2005 levels of greenhouse gas emissions from its buildings and commercial vehicle fleet (except military equipment), by 2030.

TARGET 1: By 2030, reduce GHG emissions in DND buildings and commercial vehicle fleet by 40%

Strong, Secure, Engaged: Canada's Defence Policy recognizes climate change as a key factor contributing to the growing complexity of the global security environment. In addition to supporting the government's commitment to reduce greenhouse gas emissions, Defence will strengthen its capacity for adaptation to climate change by integrating adaptation measures to climate change impacts into its policies and practices. Effective adaptation measures will mitigate the risks associated with climate change impacts on operations.

Defence is undertaking many significant and positive actions to reduce greenhouse gas production tied to infrastructure and its commercial vehicle fleet. Reduction opportunities also exist within the operational portfolio. However, given the unpredictable changes in operational tempo, the federal reduction target will not include emissions from military activities and operations. Nevertheless, Defence will support innovative approaches to reduce energy consumption and greenhouse gas emissions from military activities and operations.

TARGET 2: Invest \$225 million by 2020 in a wide range of infrastructure projects across Canada to reduce DND's carbon footprint

“However, given the unpredictable changes in operational tempo, the federal reduction target will not include emissions from military activities and operations.”

Environmental Impacts of Military Bases

- Private, bordered, highly securitized spaces
- Uses: training soldiers, storing weapons, testing weapons and preparing for war
- On bases: deforestation, dumping, effluent and emissions
- Militaries are largest consumers of hazardous material
- Toxic chemicals and solvents, munitions debris & unexploded ordnances – affecting air, land, ground water and oceans
- Remediation is very costly and not complete
- Communities are getting sick

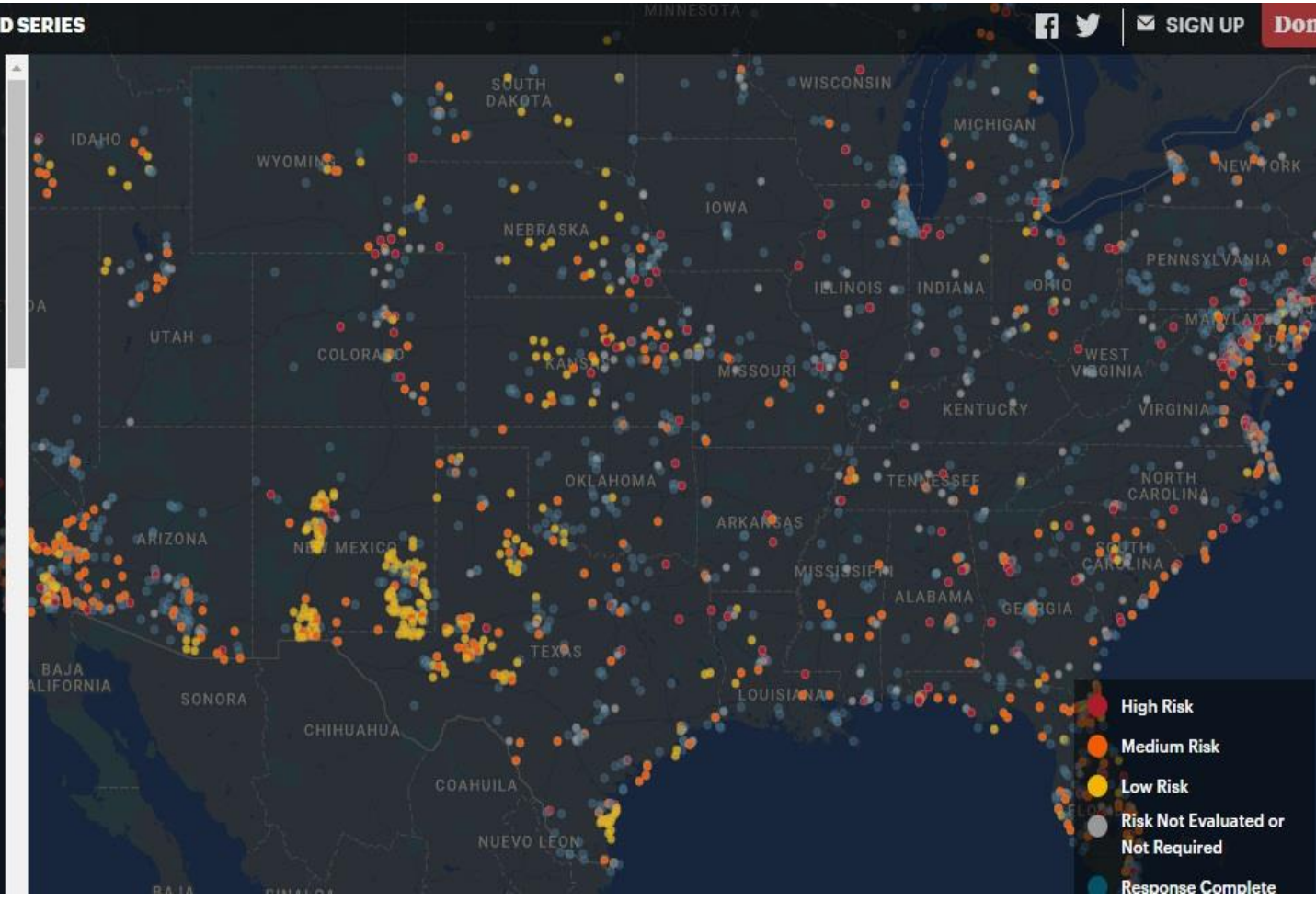
Bombs in Your Backyard

by Lena Groeger, Ryann Grochowski Jones & Abraham Lustgarten, November 30, 2017

The military spends more than a billion dollars a year to clean up sites its operations have contaminated with toxic waste and explosives. These sites exist in every state in the country. Some are located near schools, residential neighborhoods, rivers and lakes. A full map of these sites has never been made public – until now. Enter your address to see the hazardous sites near you, or select a state.

[Related story »](#)

 Use My Location



<https://projects.propublica.org/bombs/>

Your Military

DoD: At least 126 bases report water contaminants linked to cancer, birth defects

By: Tara Copp  April 26



U.S. Air Force and New Jersey state fire protection specialists from the New Jersey Air National Guard's 177th Fighter Wing battle a simulated aircraft fire at Military Sealift Command Training Center East in Freehold, N.J., on June 12. The foam used to put out aircraft fires has been tied to cancers and childhood development issues, and the military is working on developing a replacement. (Airman 1st Class Amber Powell/Air Force)

CANADA

| Reporting Organization | Suspected | Active | Closed | Total |
|---|------------|--------------|--------------|--------|
| Agriculture and Agri-Food Canada | <u>7</u> | <u>81</u> | <u>414</u> | 502 |
| Atomic Energy of Canada Limited | 0 | <u>6</u> | <u>2</u> | 8 |
| Canada Border Services Agency | 0 | <u>3</u> | <u>31</u> | 34 |
| Canadian Food Inspection Agency | 0 | 0 | <u>11</u> | 11 |
| Canadian Museum of History | 0 | 0 | <u>1</u> | 1 |
| Correctional Service of Canada | 0 | <u>51</u> | <u>92</u> | 143 |
| Environment and Climate Change Canada | <u>28</u> | <u>51</u> | <u>1,111</u> | 1,190 |
| Federal Bridge Corporation Limited | 0 | <u>1</u> | 0 | 1 |
| Fisheries and Oceans Canada | <u>935</u> | <u>2,112</u> | <u>7,985</u> | 11,032 |
| Global Affairs Canada | <u>8</u> | <u>2</u> | <u>115</u> | 125 |
| Health Canada | 0 | <u>1</u> | <u>63</u> | 64 |
| Indigenous and Northern Affairs Canada (Indian and Inuit Affairs Program) | <u>849</u> | <u>1,107</u> | <u>2,279</u> | 4,235 |
| Indigenous and Northern Affairs Canada (Northern Affairs Program) | <u>13</u> | <u>153</u> | <u>836</u> | 1,002 |
| Innovation, Science and Economic Development Canada | <u>2</u> | <u>2</u> | 0 | 4 |
| Marine Atlantic | 0 | 0 | <u>1</u> | 1 |
| National Capital Commission | <u>1</u> | <u>108</u> | <u>81</u> | 190 |
| National Defence | <u>161</u> | <u>839</u> | <u>899</u> | 1,899 |
| National Research Council | 4 | <u>8</u> | <u>10</u> | 22 |



CANADA



Source: National Defence

Property name: Valcartier

Custodian: National Defence

Location: Quebec

Description: Contaminated aquifer

Contaminants: Trichloroethylene



Status: Under remediation and risk management



Source: National Defence

Property name: 14 Wing Greenwood (Northside Lower Zeke's Brook)

Custodian: National Defence

Location: Nova Scotia

Description: Largest air force base in Eastern Canada

Contaminants: Metals, PAHs, and petroleum hydrocarbons



Status: Under remediation

Federal Contaminated Sites Inventory

CANADA

Quebeckers launch class action over cancer cluster near military base



RHÉAL SÉGUIN >

QUEBEC

PUBLISHED JANUARY 31, 2009

UPDATED MARCH 26, 2017

TRENDING

Marie-Paule Spieser lost her son in 2000. As an experienced nurse, she knew she had to be wrong.

Her friend's husband had cancer. She visited every household in the neighborhood in the form of the disease.

Then a few weeks later, another friend's son died. Other residents of Shannonville base near Quebec City, lived for years with the chemical.

Eight years later, Ms. Spieser

**CANADA**



Defence Research and
Development Canada

Recherche et développement
pour la défense Canada



Environmental Assessment of 100 Years of Military Training at Canadian Forces Base Petawawa

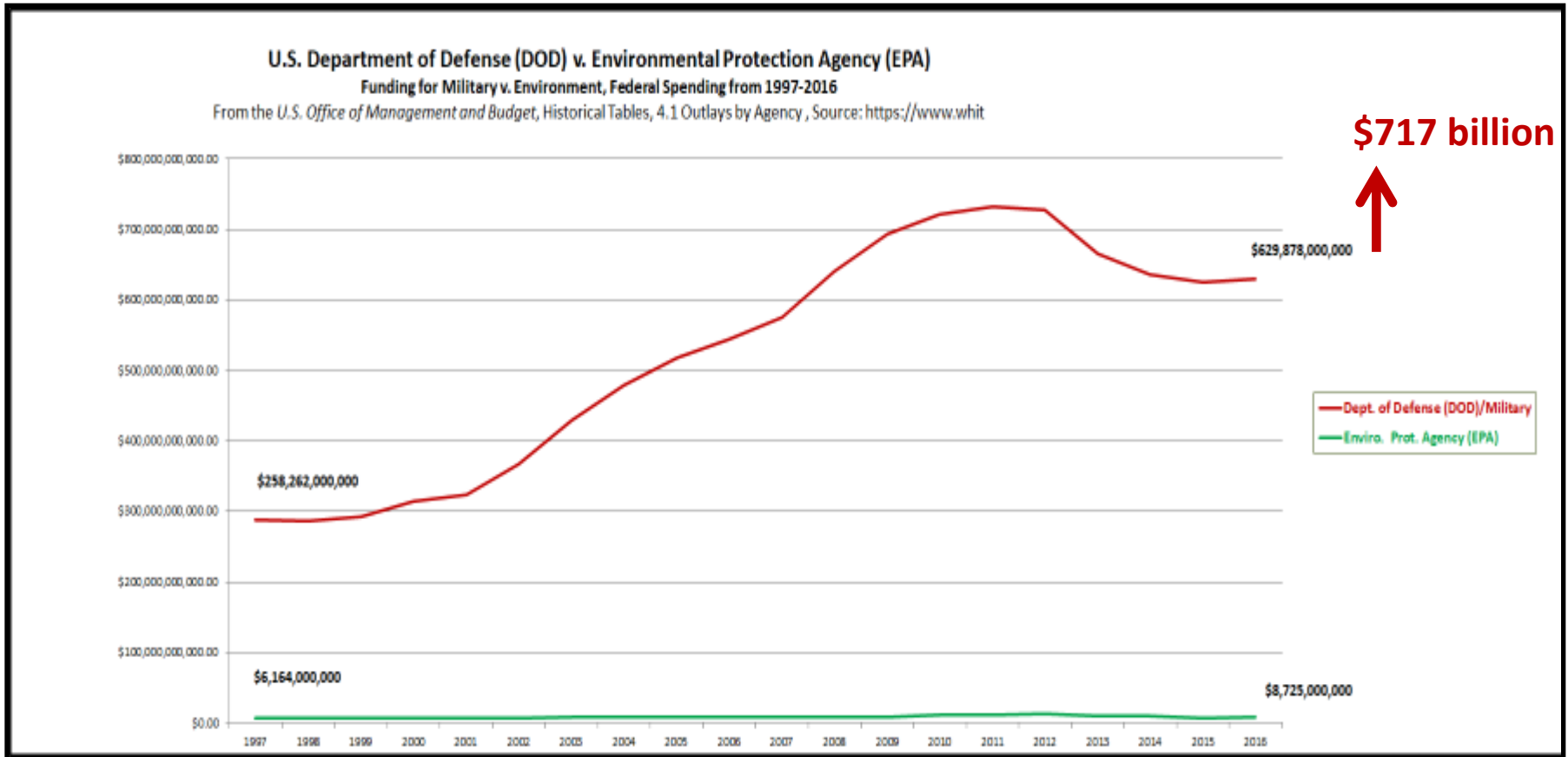
*Phase 1 - Study of the Presence of Munitions-
Related Residues in Soils and Vegetation of
Main Ranges and Training Areas*

*Brochu, S., Diaz, E., Thiboutot, S., Ampleman, G., Marois, A., Gagnon, A.
DRDC Valcartier, Québec, Qc, Canada*

The Problem of Military Expenditures

- SIPRI estimates that global military spending is \$1.69 trillion/yr
- US is ranked 1st for military spending in the world and among NATO members
- Trump administration has dramatically increased military spending over the past two years (budget cuts to EPA)
- US pressure on allied countries to spend more on defence
- Canada is ranked 6th for highest military spending among NATO members and is ranked 16th highest in the world

US Military v. EPA Spending



2015-2016

U.S. Department of Defense

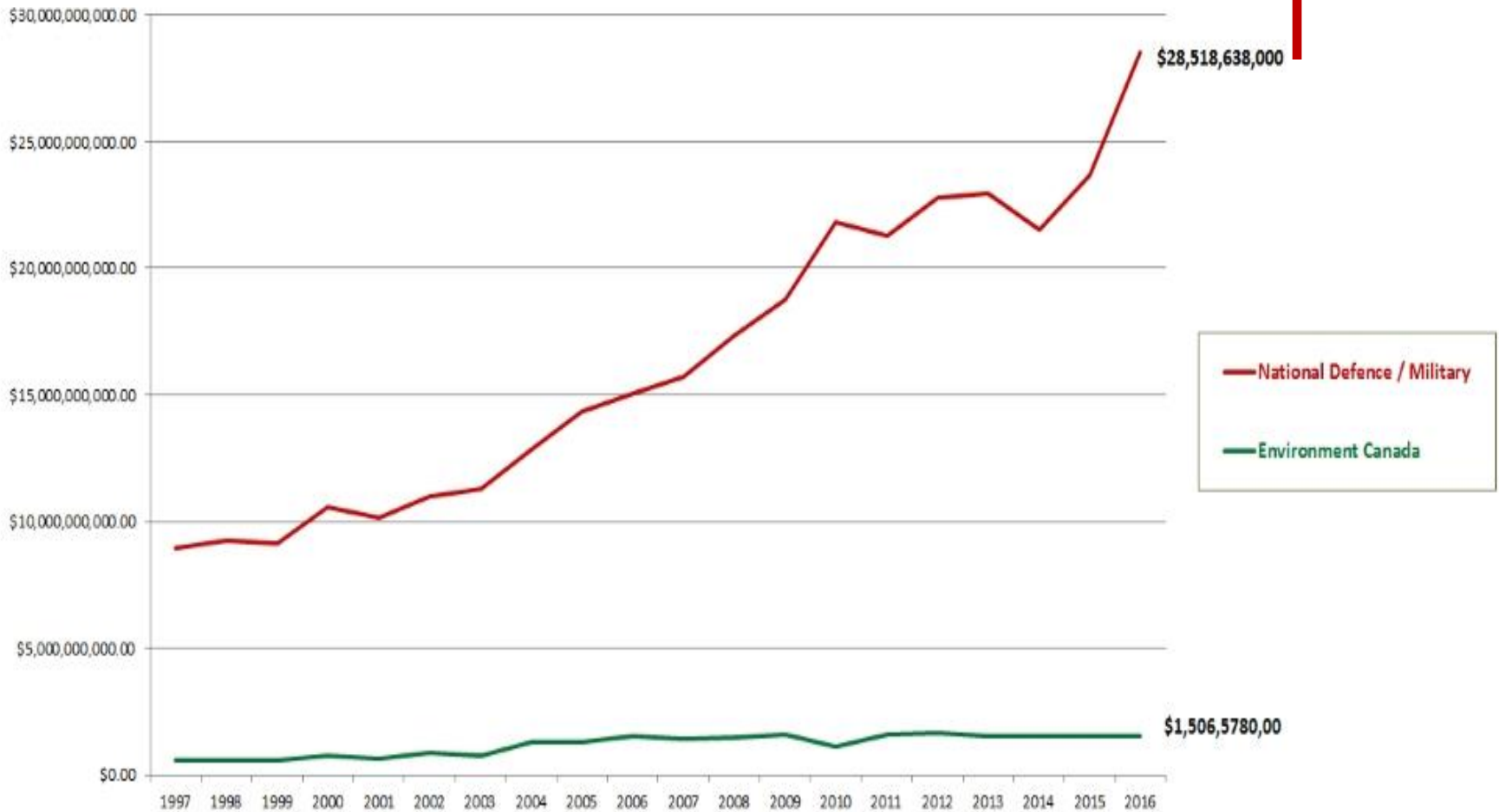
\$629,878,000,000

U.S. Environmental Protection Agency

\$8,725,000,000

CANADA Dept. of National Defence v. Dept. of Enviro.

Department of National Defence v. Environment Canada
Funding for Military v. Environment, Government of Canada Expenditures from 1997-2016
From the *Public Accounts of Canada*, Receiver General for Canada, Vol 2, Table 1, Source: <http://www.tpsgc-pwgsc.gc.ca>



2015-2016

National Defence

\$28,000,000,000

Dept. of Environment & CC

\$1,500,000,000

Militarism and military spending are grave threats to the climate, the environment and public health.

If we are serious about sustainability and peace, we must demilitarize.



www.caat.org.uk/campaigns/arms-to-renewables



Victoria, BC 2016



NYC 2014



International Day for Preventing the Exploitation of the Environment in War and Armed Conflict 6 November

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A Nepalese peacekeeper with the African Union-UN Hybrid Operation in Darfur (UNAMID) plants a tree outside UNAMID Headquarters in El Fasher, Sudan. UN Photo/Albert Gonzalez Farran

On 5 November 2001, the UN General Assembly declared 6 November of each year as the International Day for Preventing the Exploitation of the Environment in War and Armed Conflict ([A/RES/56/4](#)).

Though mankind has always counted its war casualties in terms of dead and wounded soldiers and civilians, destroyed cities and livelihoods, the environment has often remained the unpublicized victim of war. Water wells have been polluted, crops torched, forests cut down, soils poisoned, and animals killed to gain military advantage.

UN International Day for Preventing Exploitation of Environment in War & Conflict, Nov. 6

Resources

1. **Demilitarization for Deep Decarbonization** report by Tamara Lorincz on www.ipb.org under “Publications”
2. **The Green Zone: The Environmental Costs of Militarism** book by Barry Sanders
3. **Bombs in Your Backyard investigation** (US): <https://projects.propublica.org/bombs/>
5. **Federal Contaminated Sites Inventory** (Canada): <https://www.tbs-sct.gc.ca/fcsi-rscf/home-accueil-eng.aspx>
6. **Arms to Renewables** (UK) Campaign Against the Arms Trade report: www.caat.org.uk
7. **Toxic Remnants of War**: <http://www.toxicremnantsofwar.info/>
8. **Global Warming, Militarism and Nonviolence: The Art of Active Resistance** book by Marty Branagan