# **CLIMATE VULNERABILITY MONITOR**







COUNTRY PROFILE







#### THE MONITOR ASSESSMENT

The Climate Vulnerability Monitor provides a comprehensive national-level assessment of vulnerabilities and impact specifically related to contemporary climate change and carbon intensiveness. This 2012 Monitor assessment was commissioned by the Climate Vulnerable Forum and has been independently developed by DARA. It is grounded in leading and up-to-date scientific studies, research and data assimilated on the basis of an externally reviewed methodology. The assessment spans 34 indicators of impact/vulnerability: 22 for climate change ("Climate") and 12 for carbon intensiveness ("Carbon"). Estimates in human, economic and environmental terms are for 2010 and 2030. Vulnerability at country-level and by indicator is comparative to the 184 countries included in the assessment.

→ For the full report, data & additional info: www.daraint.org/cvm2 - cvm@daraint.org - +34 915310372



### **ECONOMIC NATIONAL LOSS TOTALS: CANADA**

ADDITIONAL ECONOMIC COSTS (NEGATIVE NUMBERS SHOW POSITIVE EFFECTS) - YEARLY AVERAGE



2010 NIL 2030 NIL



2010 **1.4%**<sub>GDP</sub> 2030 **2.7%** GDD



## **HUMAN NATIONAL LOSS TOTALS: CANADA**

ADDITIONAL HUMAN IMPACTS (NEGATIVE NUMBERS SHOW POSITIVE EFFECTS) - YEARLY AVERAGE

ADDITIONAL MORTALITY-YEARLY AVERAGE



2010 4,500 2030 6,500 CLIMATE

🔊 CARBON

ADDITIONAL PERSONS AFFECTED-YEARLY AVERAGE

2010 1,250,000 2030 1,700,000

2010 95,000

2030 150,000

## **FULL COUNTRY ASSESSMENT: CANADA**

HEATING AND COOLING				VULNERABILITY LEVEL	ECONOM	TONAL IIC COSTS USD PPP)	ADDITIONAL MORTALITY		ADDITIONAL AFFECTED POPULATION (1000s)		OTHER VALUE 1*		OTHER VALUE 2*				
## Acute				2010 2030	2010	2030	2010	2030	2010	2030	2010	2030	2010	2030			
FLOODS AND LANDSLIDES   30   100   1   5   8   20   20   20   20   20   20   20			ENVIRONMENTAL DISASTERS												VULNERABIL	ITY LEVELS:	
Several   Seve		_	DROUGHT		25	45									+ Acute+	+ High+	
Several   Seve			FLOODS AND LANDSLIDES		30	100	1	5	8	20					- Acute-	- High-	
WILDFIRES   1		₩			1	5									_		rato
### ABBTAT CHANGE BIODIVERSITY DESERTIFICATION 1 2,250 4,000 0 -60,000 -100,000 10 30 + - Upper fier of vulnerability love EATTOR AND COCLING 1-50 -1,500 1-50 -1,500 1-6,750 -1,500 -1,250 -2,250 LABOUR PRODUCTIVITY 300 950 7 7 7			WILDFIRES		1										_		ate
BIODIVERSITY    BIODIVERSITY			TOTAL		57	151	1	5	8	20					- Severe-	Low	
DESERTIFICATION		•															
HEATING AND COOLING				- +									10	30	+ = Upper tier	of vulnerability	j level
LABOUR PRODUCTIVITY   300   950   7 7 7     Environmental disasters   1,750   3,500   350   700   3,000									0	0					<ul> <li>= Lower tier of vulnerability level</li> </ul>		
PERMAFROST   1,750   3,500   350   700													-1,250	-2,250			
SEAL-EVEL RISE											7	7			(A) Environme	notal disastors	
WATER																	
TOTAL									0	1						-	
HEAT AND COLD ILLNESSES											-1	-1			→ Health impact		
HEAT AND COLD ILLNESSES					2,745	3,190			350	700					(N) ladustaust		
HEAT AND COLD ILLNESSES		•													y industry st	1622	
HUNGER								-	0								
MALARIA AND VECTOR-BORNE MENINGITIS TOTAL TOTAL TARANSPORT TOTAL 1. 10.00 30.000 1. 2.491 2.821 76 205 359 720  ENVIRONMENTAL DISASTERS OIL SANDER SOIL SANDER SO							75	200									
MENINGTIS  TOTAL  INDUSTRY STRESS  AGRICULTURE  FORESTRY  FORESTR									•						_		-
TOTAL   75   200   0   0   0   0   0   0   0   0									U	U							
INDUSTRY STRESS   35 80		<b>&gt;</b>					75	200	0	0						o Carbon Inten	siveness
AGRICULTURE 35 80  AGRICULTURE 150 500  FORESTRY 1 150 500  HYDRO ENERGY 2 350 -800  TRANSPORT  TOTAL 310 -520  GLIMATE TOTAL 2,491 2,821 76 205 359 720  ENVIRONMENTAL DISASTERS  OIL SANDS 1 7,250 20,000  OIL SPILLS 2 0 35 80 85  PRODUCTIVITY  ABBITAT CHANGE  BIODIVERSITY 2 10,000 30,000  OIL SPILLS 1 150 200  OIL SPILLS 1 150 200  AGRICULTURE 35 80 85  PRODUCTIVITY  ABBITAT CHANGE  BIODIVERSITY 2 10,000 30,000  AGRICULTURE 35 80 85  PRODUCTIVITY  ABBITAT CHANGE  BIODIVERSITY 2 10,000 30,000  AGRICULTURE 35 80 85  AGRICULT							75	200	U	U							
FISHERIES FORESTRY FORESTRY HYDRO ENERGY TOURISM TOTAL GLIMATE TOTAL GLIMATE TOTAL T					35	80											OTHER
FORESTRY HYDRO ENERGY -350 -800 TOURISM TRANSPORT TOTAL -310 -520 CLIMATE TOTAL 2,491 2,821 76 205 359 720  ENVIRONMENTAL DISASTERS OIL SANDS OIL SANDS OIL SANDS OIL SPILLS TOTAL 7270 20035 TOTAL HABITAT CHANGE BIDDIVERSITY CORROSION WATER 150 200 5 5 5 WATER WATER 150 200 5 5 5 WATER 150 200 4,250 3,500  SEA-LEVEL HEALTH IMPACT AIR POLICUTION INDOOR SMOKE OCCUPATIONAL HAZARDS FINE TOTAL NIDOOR SMOKE OCCUPATIONAL HAZARDS FINE FINE SKIN CANCER TOTAL 1000 1,50																	VALUE 2
HYDRO ENERGY -350 -800   Commission   Commis																	Decline in
TOURISM -100 -200  TRANSPORT															BIODIVERSITY		biological
TRÂNSPORT TOTAL  2.491 2.821 76 205 359 720    HATING & Change in energy (countailve)																	richness
TOTAL   310   -520   520   5359   720						200									DESERTIL	Additional land	
ENVIRONMENTAL DISASTERS					-310	-520											
ENVIRONMENTAL DISASTERS							76	205	359	720							
Correction   Cor						· ·										Change in energ	9y
TOTAL   7270   20035   250   SEA-LEVEL   Net loss of land (km²)   10,000   30,000   55   250	CARBON														COOLING	tuau (GVVII)	
PRODUCTIVITY   Particularly   Part				- +											LABOUR		
Note											80	85					
BIODIVERSITY					7270	20035											
CORROSION   5   5   5   18nd km/ly   18nd		<b>(h</b> )													CEA-LEVEL		
WATER 150 200 4,250 3,500 WATER 10155 30205  WATER 150 200 4,250 3,500 WATER 10230 (km²) 200 (km											55	250					
TOTAL 10155 30205    WATER   QUADITICAL   10155 30205     WATER   QUADITICAL   10155 30205     WATER   QUADITICAL   10155 30205     WATER   QUADITICAL   10155 30205     WATER   QUADITICAL   10155 30205     WATER   QUADITICAL   10155 30205     WATER   QUADITICAL   10155 30205     WATER   QUADITICAL   10155 30205     WATER   QUADITICAL   10155 30205     WATER   QUADITICAL   WATER   WATER   QUADITICAL   WATER   WA											4.050	0.500					
HEALTH IMPACT				+ +							4,250	3,500			WATER		
NDOOR SMOKE		<b>●</b>			10155	30205											
NDOOR SMOKE							2.500	2.250	45	00					-	Tonnes tovic	
OCCUPATIONAL HAZARDS															OILSANDS	waste (1000s)	
SKIN CANCER																	
TOTAL 4600 6600 96 148  INDUSTRY STRESS  AGRICULTURE - + 650 1,250  BIODIVERSITY biological richness															OIL SPILLS		
INDUSTRY STRESS  AGRICULTURE - + 650 1,250  BIODIVERSITY Decline in biological richness																spiii (1000s)	
AGRICULTURE - + 650 1,250							4000	0000	30	140					DIODUITEDOITI	Decline in	
				- +	650	1.250									BIUDIVERSITY		ess
TWITH EISHERIES 150 400 Volume of			FISHERIES	+ +	150	400									Valume of		
FORESTRY 350 500 WATER water to treat															WATER water to treat		
TOTAL 1150 2150 (millions m²)																(millions m³)	
CARBON TOTAL 18,575 52,390 4,600 6,600 96 148			CARBON TOTAL		18,575	52,390	4,600	6,600	96	148							