

Prior Estimates of CH4 Emissions Inventories				
CALGEM Subcategory 0.1° x 0.1°	Total Flux Prior TgCH ₄ /yr	Flux Prior CV TgCH ₄ /yr	Flux Prior SCB TgCH ₄ /yr	Fraction SoCAB
CG_indf	0.304	0.147	0.1568	52%
CG_dair	0.232	0.200	0.0316	14%
CG_ndai	0.314	0.311	0.0032	1%
CG_ngas	0.093	0.059	0.0335	36%
CG_petr	0.054	0.047	0.0070	13%
CG_wetl	0.038	0.037	0.0009	2%
CG_crop	0.026	0.026	0.0000	0%
CG_wwtr	0.063	0.008	0.0549	87%
Totals	1.123	0.835	0.288	26%

	CV	SoCAB	Fraction SoCAB
Effective Scaling NOAA B.C. (unitless scaling)	2.179	1.094	
Effective Scaling GEOS-Chem B.C. (unitless scaling)	2.029	1.116	
Posterior Total NOAA B.C.(TgCH ₄ /yr)	1.818	0.315	15%
Posterior Total GEOS-Chem B.C. (TgCH ₄ /yr)	1.693	0.321	16%

Total CA Budget (NOAA B.C.)	2.134 ± 0.398	TgCH₄/yr
Total CA Budget (GEOS-Chem B.C.)	2.014 ± 0.343	TgCH₄/yr

CALGEM CV Inversion						
Optimized Independently	Colinearity Factor	Scaling NOAA B.C.	Fluxes A TgCH ₄ /yr	Scaling A GEOS-Chem B.C.	Fluxes A TgCH ₄ /yr	
A	1.86	1.55	0.228	1.12	0.164	
B	1.34	2.33	0.468	2.36	0.473	
B	1.34	2.33	0.727	2.36	0.735	
C	3.45	2.83	0.168	2.28	0.135	
C	3.45	2.83	0.133	2.28	0.107	
X		1.00	0.037	1.00	0.037	
D	1.90	1.56	0.040	1.04	0.027	
E	1.45	2.38	0.019	1.98	0.016	
Prior Total			0.835		0.835	
INVERSION TOTAL			1.818		1.693	

Scaling Factors		mean	sd	mean	sd	
Landfills	A		1.552	0.230	1.118	0.174
Cows(D&ND)	B		2.335	0.081	2.362	0.082
NatGas&Pet	C		2.834	0.069	2.278	0.073
Crop(Rice)	D		1.563	0.053	1.042	0.046
Wastewater	E		2.381	0.130	1.980	0.117

Fluxes	Prior	Posterior - NOAA	CI = 2 sigma	Posterior GC	CI
Landfills	0.147	0.228	0.105	0.164	0.057
Cows(D&ND)	0.511	1.194	0.194	1.208	0.198
NatGas&Pet	0.106	0.301	0.041	0.242	0.035
Crop(Rice)	0.026	0.040	0.004	0.027	0.002
Wastewater	0.008	0.019	0.005	0.016	0.004
Total	0.798	1.782	0.350	1.656	0.297

CALGEM SoCAB Inversion						
Optimized Independently	Colinearity Factor	Scaling NOAA B.C.	Fluxes A TgCH ₄ /yr	Scaling A GEOS-Chem B.C.	Fluxes A TgCH ₄ /yr	
A	1.52	0.76	0.120	0.80	0.126	
B	1.24	1.53	0.049	1.59	0.050	
B	1.24	1.53	0.005	1.59	0.005	
A	1.52	0.76	0.026	0.80	0.027	
A	1.52	0.76	0.005	0.80	0.006	
X		1.00	0.001	1.00	0.001	
X		1.00	0.000	1.00	0.000	
C	1.50	2.01	0.110	1.95	0.107	
Prior Total			0.288		0.288	
INVERSION TOTAL			0.315		0.321	

Scaling Factors		mean	sd	mean	sd	
LndFI&NGas&Pet	A		0.762	0.042	0.801	0.039
Cows(D&ND)	B		1.533	0.127	1.589	0.129
Wastewater	C		2.008	0.101	1.950	0.093

Fluxes	Prior	Posterior - NOAA	CI = 2 sigma	Posterior GC	CI
LndFI&NGas&Pet	0.197	0.150	0.013	0.158	0.012
Cows(D&ND)	0.035	0.053	0.014	0.055	0.014
Wastewater	0.055	0.110	0.022	0.107	0.020
Total	0.287	0.314	0.048	0.321	0.046