

16. Goose A

This station was not updated in CRA (2015) because it is an active IDF station and was updated by EC. The EC IDF V2.3 (2015) curve is reproduced below, with the addition of the 20-year return period.

Office of Climate Change and Energy Efficiency

Short Duration Rainfall Intensity-Duration-Frequency Data
Données sur l'intensité, la durée et la fréquence des chutes
de pluie de courte durée

Gumbel - Method of moments/Méthode des moments

2015/10/30

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GOOSE A                                     NL      8501900
Latitude: 53 19'N   Longitude: 60 25'W   Elevation/Altitude: 48      m
Years/Années : 1961 - 2013      # Years/Années :      50
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Table 1 : Annual Maximum (mm)/Maximum annuel (mm)

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Year 5 min 10 min 15 min 30 min 1 h 2 h 6 h 12 h 24 h
Année
*EC-IDF* 1961 2.3 4.1 4.1 7.1 8.4 12.7 22.9 37.6 57.4
*EC-IDF* 1962 4.1 5.1 6.3 6.9 6.9 9.9 20.6 33.0 37.8
*EC-IDF* 1963 11.2 20.1 24.6 33.3 35.6 39.1 61.2 67.8 75.2
*EC-IDF* 1966 5.8 11.2 11.4 11.4 11.4 14.2 26.7 44.2 59.9
*EC-IDF* 1967 5.6 8.9 9.1 13.5 15.7 17.3 18.3 24.4 36.8
*EC-IDF* 1968 2.5 3.6 4.3 5.3 8.1 13.5 24.4 31.7 44.7
*EC-IDF* 1969 2.8 5.3 7.6 8.6 15.5 16.3 28.4 37.3 38.1
*EC-IDF* 1970 4.1 6.6 8.9 11.7 15.7 24.4 30.2 36.8 46.2
*EC-IDF* 1971 5.3 7.1 7.9 8.1 8.1 9.4 20.6 29.7 31.7
*EC-IDF* 1972 5.1 7.4 9.1 10.4 14.0 14.2 20.1 31.0 39.6
*EC-IDF* 1973 6.3 9.9 12.4 15.0 19.3 31.7 38.9 40.9 41.1
*EC-IDF* 1974 3.0 4.6 5.1 6.9 10.7 11.2 22.1 33.3 43.9
*EC-IDF* 1975 4.1 5.1 6.1 7.9 9.1 11.7 13.7 18.0 18.8
*EC-IDF* 1976 3.3 3.6 5.6 8.6 10.7 14.2 30.2 44.2 50.3
*EC-IDF* 1977 3.8 4.1 4.1 4.8 6.6 8.1 19.3 27.2 31.2
*EC-IDF* 1978 3.0 3.6 4.6 5.6 8.4 12.1 21.3 26.0 33.8
*EC-IDF* 1979 3.9 4.7 4.7 4.7 8.0 10.6 24.0 30.2 36.3
*EC-IDF* 1980 1.9 3.3 5.2 6.8 8.1 10.6 26.3 33.6 44.3
*EC-IDF* 1981 2.2 4.0 4.8 6.5 10.6 19.4 44.6 60.0 68.0
*EC-IDF* 1982 1.4 1.7 2.5 4.7 8.8 13.9 20.9 22.5 22.8
*EC-IDF* 1983 3.7 7.3 7.3 8.8 10.5 13.0 26.0 32.4 43.6
*EC-IDF* 1984 3.2 4.3 4.9 5.9 8.1 11.1 21.4 24.2 29.5
*EC-IDF* 1985 4.5 5.2 5.4 7.0 8.3 15.3 28.8 40.3 47.3
*EC-IDF* 1986 5.6 9.0 9.8 10.5 11.2 12.5 24.7 32.9 40.9
*EC-IDF* 1987 5.5 6.6 6.8 7.9 11.8 18.2 21.0 31.7 36.4
*EC-IDF* 1988 2.6 3.6 4.0 5.5 7.2 14.3 24.8 28.9 30.8
*EC-IDF* 1989 6.2 6.6 6.6 6.6 7.4 12.6 22.7 35.3 56.6
*EC-IDF* 1990 4.5 7.1 8.3 9.6 9.8 10.8 18.4 23.4 27.2
*EC-IDF* 1991 4.4 8.0 10.4 16.8 17.4 17.4 26.3 37.8 43.2
*EC-IDF* 1992 2.5 3.2 4.0 6.7 8.8 11.1 18.2 25.2 33.1
*EC-IDF* 1993 2.8 4.3 5.0 6.3 10.8 11.9 15.1 24.9 34.1
*EC-IDF* 1994 3.1 4.2 4.7 6.2 12.2 15.1 26.8 34.4 39.8
*EC-IDF* 1995 4.6 5.2 6.3 7.9 13.0 16.9 20.0 22.2 29.8
*EC-IDF* 1996 3.9 5.4 7.4 11.6 15.9 21.5 25.3 34.8 51.1
*EC-IDF* 1997 3.7 5.3 6.2 7.3 10.0 13.3 26.7 39.7 55.1
*EC-IDF* 1998 5.4 10.5 11.9 15.7 15.9 15.9 17.8 25.3 34.3
*EC-IDF* 1999 8.2 11.9 15.8 15.8 18.5 22.3 28.0 43.8 72.2
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EC-IDF	2000	3.5	4.1	5.7	6.3	8.2	12.2	24.0	29.5	32.2
EC-IDF	2001	7.1	7.3	8.7	13.0	13.6	13.6	26.9	35.0	50.6
EC-IDF	2002	5.1	6.3	7.1	7.3	8.5	16.1	28.2	41.3	52.5
EC-IDF	2003	2.8	4.4	5.4	8.8	9.6	11.2	19.1	22.7	32.9
EC-IDF	2004	4.4	7.3	9.9	13.3	14.3	15.9	38.8	40.4	47.7
EC-IDF	2005	1.9	2.4	3.2	5.4	9.6	15.6	28.6	31.6	40.6
EC-IDF	2006	6.9	10.8	15.0	20.3	20.3	20.3	20.5	26.6	37.1
EC-IDF	2007	2.6	4.8	5.4	9.2	11.4	13.4	24.5	30.5	41.9
EC-IDF	2008	3.8	6.3	8.2	10.9	16.2	23.1	29.2	45.7	61.6
EC-IDF	2009	5.1	7.5	11.3	15.8	17.4	17.6	-99.9	40.4	58.4
EC-IDF	2010	8.3	12.3	13.0	13.8	14.4	15.6	21.4	33.5	41.2
EC-IDF	2011	5.1	6.1	6.7	7.6	9.0	15.0	22.6	22.6	31.0
EC-IDF	2012	2.1	3.1	4.2	4.8	6.0	8.1	18.8	29.2	39.2
EC-IDF	2013	3.1	3.7	3.7	4.2	7.2	10.9	24.1	35.8	39.6

# Yrs.	51	51	51	51	51	51	50	51	51
Années									
Mean	4.3	6.2	7.5	9.5	11.8	15.2	25.1	33.6	42.5
Moyenne									
Std. Dev.	1.9	3.2	3.9	5.0	5.0	5.6	7.8	9.2	12.0
Écart-type									
Skew.	1.30	1.96	2.08	2.44	2.36	2.21	2.51	1.39	0.77
Dissymétrie									
Kurtosis	5.74	9.01	9.47	11.87	11.96	9.82	12.27	6.63	3.65

*-99.9 Indicates Missing Data/Données manquantes

Warning: annual maximum amount greater than 100-yr return period amount
Avertissement : la quantité maximale annuelle excède la quantité pour une période de retour de 100 ans

Year/Année	Duration/Durée	Data/Données	100-yr/ans
1963	5 min	11.2	10.2
1963	10 min	20.1	16.2
1963	15 min	24.6	19.7
1963	30 min	33.3	25.3
1963	1 h	35.6	27.5
1963	2 h	39.1	32.7
1963	6 h	61.2	49.4
1963	12 h	67.8	62.3

Table 2a : Return Period Rainfall Amounts (mm)
Quantité de pluie (mm) par période de retour

Duration/Durée	2	5	10	20	25	50	100	#Years
	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	Années
EC-IDF 5 min	4.0	5.6	6.7	7.8	8.1	9.1	10.2	51
EC-IDF 10 min	5.7	8.5	10.4	12.2	12.8	14.5	16.2	51
EC-IDF 15 min	6.8	10.3	12.6	14.7	15.4	17.6	19.7	51
EC-IDF 30 min	8.7	13.1	16.1	18.9	19.8	22.6	25.3	51
EC-IDF 1 h	11.0	15.4	18.3	21.2	22.0	24.8	27.5	51
EC-IDF 2 h	14.3	19.2	22.5	25.6	26.6	29.6	32.7	51
EC-IDF 6 h	23.8	30.7	35.2	39.5	40.9	45.2	49.4	50
EC-IDF 12 h	32.1	40.1	45.5	50.6	52.3	57.3	62.3	51
EC-IDF 24 h	40.6	51.2	58.2	65.0	67.1	73.7	80.3	51

Table 2b :

Return Period Rainfall Rates (mm/h) - 95% Confidence limits
Intensité de la pluie (mm/h) par période de retour - Limites de confiance de 95%

Duration/Durée	2	5	10	20	25	50	100	#Years
	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	Années
EC-IDF 5 min	47.6	67.5	80.6	93.3	97.3	109.6	121.9	51
	+/- 5.7 +/-	9.6 +/-	12.9 +/-	16.3 +/-	17.4 +/-	20.8 +/-	24.2 +/-	51
EC-IDF 10 min	34.3	51.2	62.4	73.2	76.6	87.1	97.5	51
	+/- 4.8 +/-	8.1 +/-	11.0 +/-	13.9 +/-	14.8 +/-	17.7 +/-	20.6 +/-	51

EC-IDF 15 min	27.3	41.1	50.2	59.0	61.8	70.3	78.8	51
	+/- 3.9	+/- 6.6	+/- 8.9	+/- 11.3	+/- 12.1	+/- 14.4	+/- 16.8	51
EC-IDF 30 min	17.3	26.3	32.2	37.8	39.6	45.2	50.7	51
	+/- 2.5	+/- 4.3	+/- 5.8	+/- 7.3	+/- 7.8	+/- 9.3	+/- 10.9	51
EC-IDF 1 h	11.0	15.4	18.3	21.2	22.0	24.8	27.5	51
	+/- 1.3	+/- 2.1	+/- 2.9	+/- 3.6	+/- 3.9	+/- 4.6	+/- 5.4	51
EC-IDF 2 h	7.2	9.6	11.2	12.8	13.3	14.8	16.3	51
	+/- 0.7	+/- 1.2	+/- 1.6	+/- 2.0	+/- 2.1	+/- 2.6	+/- 3.0	51
EC-IDF 6 h	4.0	5.1	5.9	6.6	6.8	7.5	8.2	50
	+/- 0.3	+/- 0.6	+/- 0.7	+/- 0.9	+/- 1.0	+/- 1.2	+/- 1.4	50
EC-IDF 12 h	2.7	3.3	3.8	4.2	4.4	4.8	5.2	51
	+/- 0.2	+/- 0.3	+/- 0.4	+/- 0.6	+/- 0.6	+/- 0.7	+/- 0.8	51
EC-IDF 24 h	1.7	2.1	2.4	2.7	2.8	3.1	3.3	51
	+/- 0.1	+/- 0.2	+/- 0.3	+/- 0.4	+/- 0.4	+/- 0.5	+/- 0.5	51

Table 3 : Interpolation Equation / Équation d'interpolation: $R = A \cdot T^B$

R = Interpolated Rainfall rate (mm/h)/Intensité interpolée de la pluie (mm/h)

RR = Rainfall rate (mm/h) / Intensité de la pluie (mm/h)

T = Rainfall duration (h) / Durée de la pluie (h)

Statistics/Statistiques	2	5	10	20	25	50	100
	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans
Mean of RR/Moyenne de RR	17.0	24.6	29.7	34.5	36.1	40.8	45.5
Std. Dev. /Écart-type (RR)	16.1	23.6	28.6	33.4	34.9	39.6	44.2
Std. Error/Erreur-type	1.1	3.5	5.1	6.7	7.2	8.8	10.4
Coefficient (A)	11.4	15.8	18.7	21.5	22.4	25.2	27.9
Exponent/Exposant (B)	-0.595	-0.629	-0.643	-0.653	-0.656	-0.663	-0.669
Mean % Error/% erreur moyenne	3.2	4.7	5.3	5.9	6.1	6.5	6.9

Short Duration Rainfall Intensity-Duration-Frequency Data Données sur l'intensité, la durée et la fréquence des chutes de pluie de courte durée

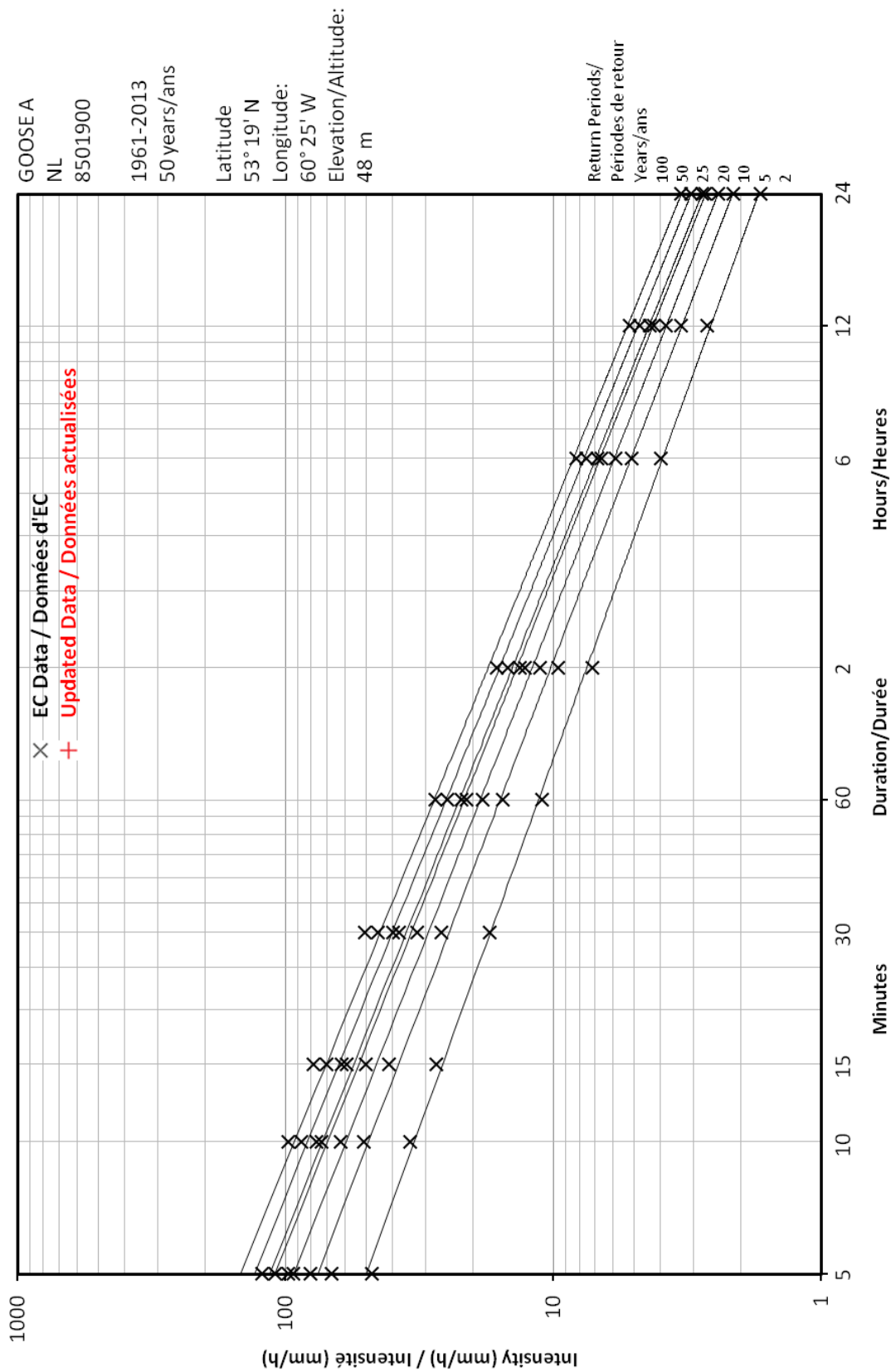


Figure 16.1 Goose A IDF Curve – EC IDF V2.3

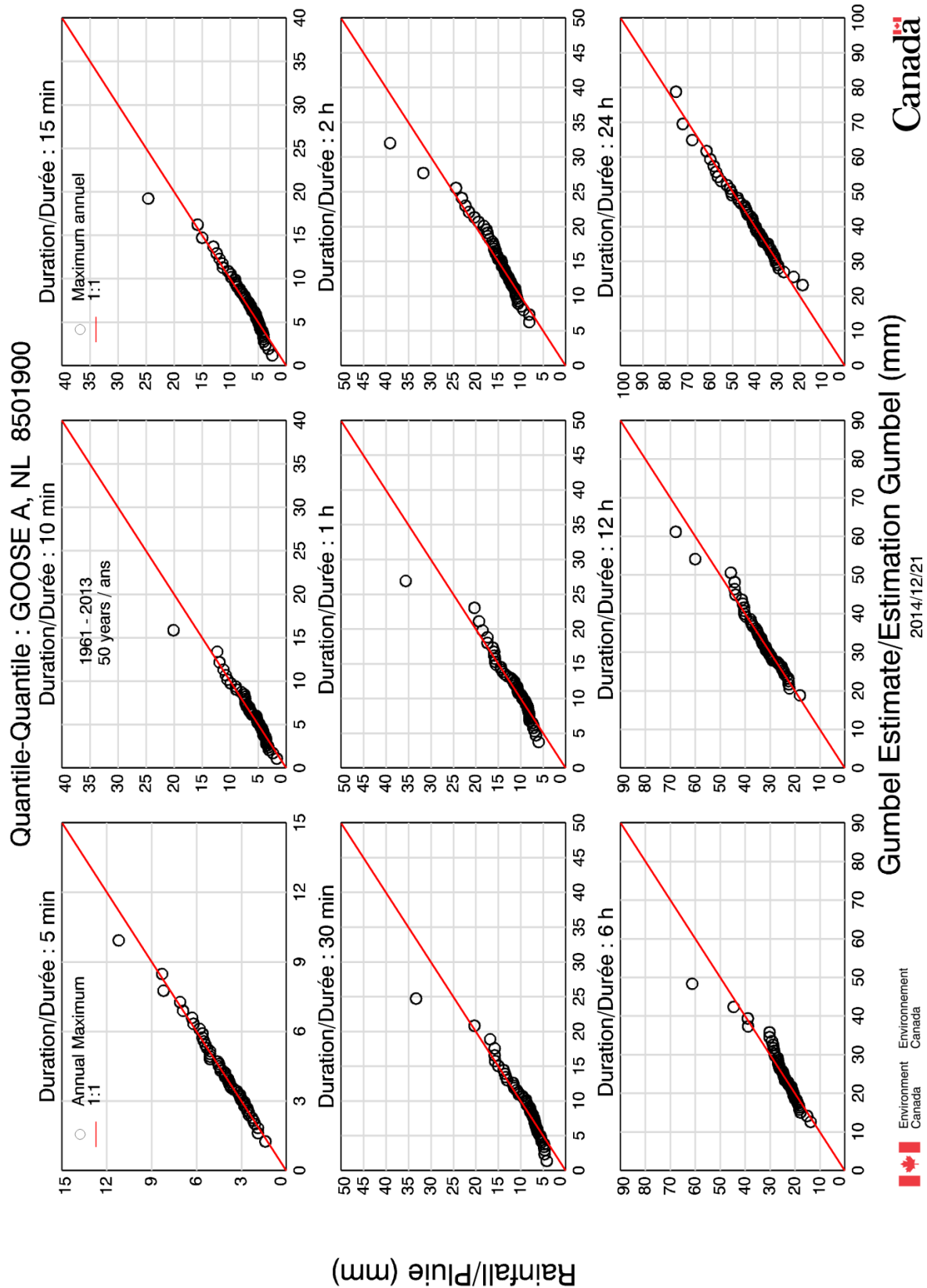


Figure 16.2 Goose A Quantile-Quantile Plot – EC IDF V2.3

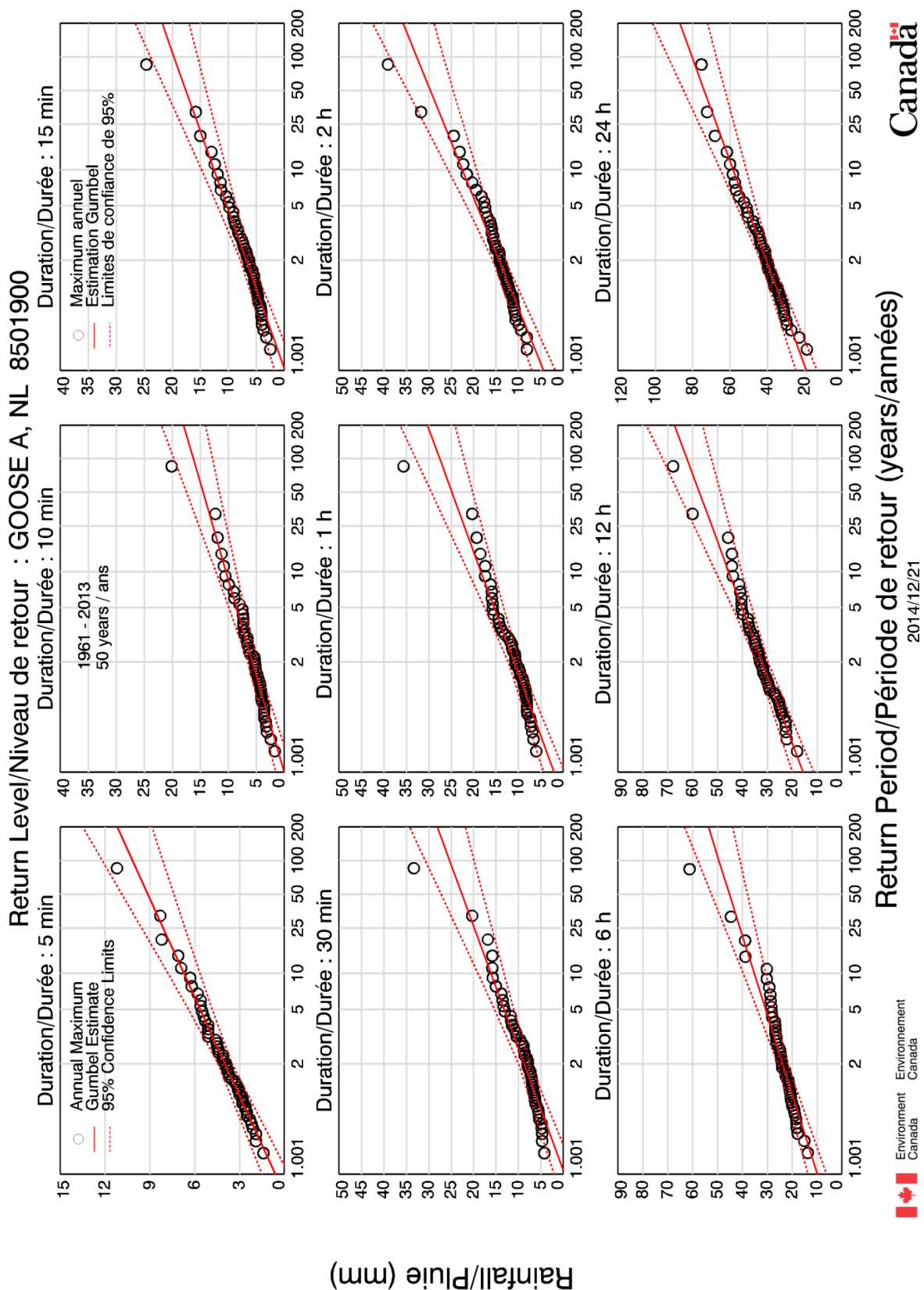
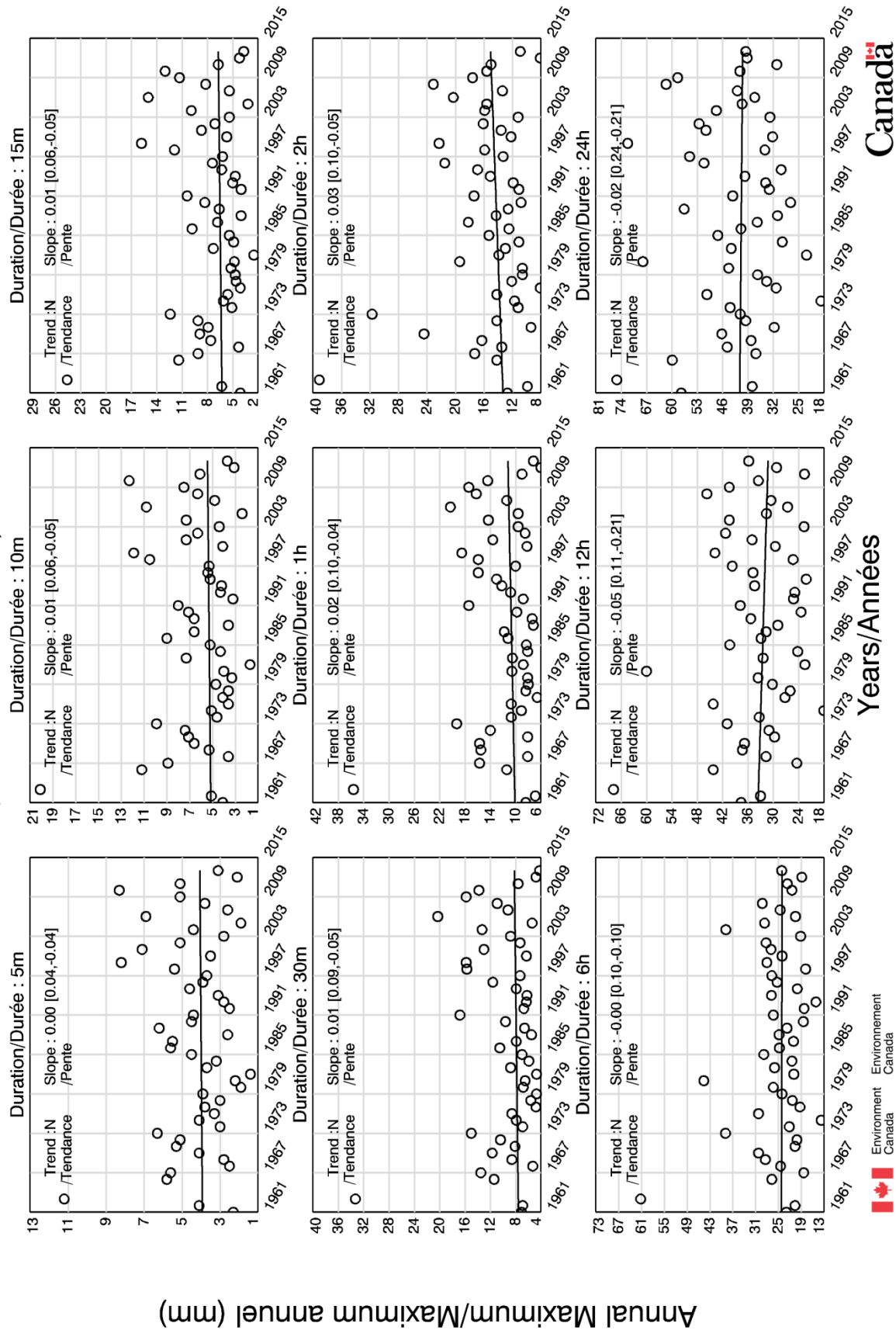


Figure 16.3 Goose A Return Level Plot – EC IDF V2.3

Trend/Tendance : GOOSE A, NL 8501900



Canada

Years/Années



Figure 16.4 Goose A Trend Plot – EC IDF V2.3