

9. Port Aux Basques

This station was updated in CRA (2015). The updated IDF curve from CRA (2015) is reproduced below, with the addition of the 20-year return period.

This IDF curve was updated using 6-hr data from Port Aux Basques. The IDF curve decreased significantly during the update (Table 9.1). Where there are decreases greater than 5 percent, users should exercise caution when using the updated IDF curve, or use the EC IDF curve.

Table 9.1 Differences Between IDF Curves for Port Aux Basques

Percent Difference in Precipitation Amount (%) (Difference in Precipitation Amount (mm))						
Duration	Return Period (years)					
	2	5	10	25	50	100
5-min	N/A	N/A	N/A	N/A	N/A	N/A
10-min	N/A	N/A	N/A	N/A	N/A	N/A
15-min	N/A	N/A	N/A	N/A	N/A	N/A
30-min	N/A	N/A	N/A	N/A	N/A	N/A
1-hr	N/A	N/A	N/A	N/A	N/A	N/A
2-hr	N/A	N/A	N/A	N/A	N/A	N/A
6-hr	-7.3 (-3.3)	-8.8 (-5.2)	-9.4 (-6.4)	-10.0 (-8.0)	-10.4 (-9.1)	-10.7 (-10.3)
12-hr	-6.0 (-3.5)	-7.5 (-5.5)	-8.2 (-6.9)	-8.9 (-8.6)	-9.3 (-9.8)	-9.6 (-11.1)
24-hr	-6.0 (-4.3)	-7.4 (-6.7)	-8.0 (-8.4)	-8.7 (-10.4)	-9.0 (-12.0)	-9.3 (-13.5)
Notes: Red numbers indicate that the updated IDF curve is lower than the EC-IDF V2.3 IDF curve for that duration and return period. Bold numbers indicate changes greater than 5 percent.						

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

```

=====
PORT AUX BASQUES                               NL      8402975
Updated with 6-hr data measured at Port Aux Basques (8402975): 1999-2014

Latitude: 47 34'N   Longitude: 59 9'W   Elevation/Altitude: 39      m
Years/Années : 1975 - 2014           # Years/Années : 19
=====

```

Table 1 : Annual Maximum (mm)/Maximum annuel (mm)

	Year Année	5 min	10 min	15 min	30 min	1 h	2 h	6 h	12 h	24 h
EC-IDF	1975	5.1	8.9	9.7	12.2	14.7	22.4	43.7	53.1	76.2
EC-IDF	1976	3.3	5.1	6.1	7.9	12.5	20.1	35.3	50.6	65.8
EC-IDF	1977	4.6	7.4	9.7	16.5	20.8	31.5	52.1	53.3	64.8
EC-IDF	1978	3.0	4.1	5.8	8.1	13.1	25.4	45.4	52.7	58.2
EC-IDF	1979	4.6	6.8	8.9	14.3	20.5	30.2	60.3	69.3	118.0
EC-IDF	1980	4.8	9.2	12.9	16.0	16.5	24.4	60.1	92.0	108.3
EC-IDF	1981	4.2	6.0	7.4	12.9	20.2	37.8	72.8	85.2	87.2
EC-IDF	1982	5.0	7.1	8.2	9.9	13.8	24.8	45.4	67.6	89.8
EC-IDF	1983	4.7	9.4	14.1	20.8	29.4	44.5	67.6	73.8	75.4
EC-IDF	1984	2.5	4.8	7.2	14.4	19.4	25.7	48.4	78.6	99.6
EC-IDF	1985	4.6	6.2	9.4	17.2	27.0	44.4	74.1	86.6	86.8
EC-IDF	1986	10.7	11.7	15.7	19.4	19.7	20.7	22.5	32.0	44.2
EC-IDF	1987	3.1	4.7	6.1	10.0	14.3	18.4	34.9	42.3	48.3
EC-IDF	1988	2.9	5.7	5.7	6.7	9.9	15.1	31.9	45.2	45.2
EC-IDF	1989	6.5	10.6	13.5	23.5	32.4	51.4	59.3	61.0	61.4
EC-IDF	1990	4.7	7.6	9.8	13.9	17.8	22.0	34.0	51.0	83.4
EC-IDF	1991	3.9	3.9	4.8	7.3	10.9	17.9	23.0	33.1	42.4
EC-IDF	1993	4.1	6.2	8.9	11.6	18.5	19.3	37.6	63.1	71.7
EC-IDF	1995	5.0	9.4	11.0	14.1	20.1	31.1	53.1	62.7	70.0
EC-IDF	1996	-99.9	-99.9	-99.9	-99.9	-99.9	-99.9	-99.9	-99.9	106.0
UPDATE	1999	NM	NM	NM	NM	NM	NM	41.0	43.0	63.0
UPDATE	2000	NM	NM	NM	NM	NM	NM	36.0	45.0	59.0
UPDATE	2001	NM	NM	NM	NM	NM	NM	36.0	60.0	71.0
UPDATE	2002	NM	NM	NM	NM	NM	NM	34.0	66.0	71.0
UPDATE	2003	NM	NM	NM	NM	NM	NM	45.0	55.0	56.0
UPDATE	2004	NM	NM	NM	NM	NM	NM	57.0	72.0	75.5
UPDATE	2005	NM	NM	NM	NM	NM	NM	25.0	39.0	49.5
UPDATE	2006	NM	NM	NM	NM	NM	NM	36.0	41.0	42.0
UPDATE	2007	NM	NM	NM	NM	NM	NM	30.0	53.0	73.0
UPDATE	2008	NM	NM	NM	NM	NM	NM	44.0	48.0	51.0
UPDATE	2009	NM	NM	NM	NM	NM	NM	48.0	60.0	69.0
UPDATE	2010	NM	NM	NM	NM	NM	NM	36.0	47.0	54.0
UPDATE	2011	NM	NM	NM	NM	NM	NM	-99.9	-99.9	100.0
UPDATE	2012	NM	NM	NM	NM	NM	NM	52.0	60.0	65.0
UPDATE	2013	NM	NM	NM	NM	NM	NM	32.0	40.0	58.0
UPDATE	2014	NM	NM	NM	NM	NM	NM	36.0	50.0	75.0

# Yrs.	19	19	19	19	19	19	19	34	34	36
Années										
Mean	4.6	7.1	9.2	13.5	18.5	27.7	43.8	56.8	70.4	
Moyenne										
Std. Dev.	1.8	2.3	3.1	4.7	6.0	10.2	13.4	15.0	19.5	
Écart-type										
Skew.	2.37	0.45	0.59	0.42	0.83	1.06	0.60	0.58	0.64	
Dissymétrie										
Kurtosis	10.95	2.75	2.99	3.08	3.80	3.68	3.00	3.08	3.11	

*-99.9 Indicates Missing Data/Données manquantes

* NM Indicates No Measurements/Aucunes mesures

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
1986	5 min	10.7	10.1

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 Années
	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	
EC-IDF	5 min	4.3	5.9	6.9	7.9	8.2	9.2	19
EC-IDF	10 min	6.7	8.7	10.0	11.3	11.7	12.9	19
EC-IDF	15 min	8.7	11.4	13.3	15.0	15.5	17.3	19
EC-IDF	30 min	12.7	16.9	19.6	22.3	23.1	25.7	19
EC-IDF	1 h	17.5	22.8	26.4	29.8	30.8	34.2	19
EC-IDF	2 h	26.1	35.1	41.0	46.7	48.5	54.1	19

UPDATE	6 h	41.6	53.5	61.3	68.9	71.3	78.6	85.9	34
UPDATE	12 h	54.4	67.6	76.4	84.9	87.6	95.8	104.0	34
UPDATE	24 h	67.2	84.4	95.8	106.7	110.2	120.8	131.4	36

* 6-hr data were used for the update: shorter durations were not updated

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 Années
		yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	yr/ans	
EC-IDF	5 min	51.7	70.4	82.8	94.7	98.5	110.1	121.6	19
		+/- 8.7	+/- 14.7	+/- 19.9	+/- 25.1	+/- 26.8	+/- 32.1	+/- 37.4	19
EC-IDF	10 min	40.4	52.3	60.2	67.8	70.2	77.6	84.9	19
		+/- 5.6	+/- 9.4	+/- 12.7	+/- 16.0	+/- 17.1	+/- 20.5	+/- 23.8	19
EC-IDF	15 min	34.8	45.8	53.0	60.0	62.2	69.0	75.8	19
		+/- 5.1	+/- 8.6	+/- 11.7	+/- 14.7	+/- 15.7	+/- 18.8	+/- 21.9	19
EC-IDF	30 min	25.5	33.8	39.2	44.5	46.2	51.3	56.4	19
		+/- 3.9	+/- 6.5	+/- 8.8	+/- 11.1	+/- 11.9	+/- 14.2	+/- 16.5	19
EC-IDF	1 h	17.5	22.8	26.4	29.8	30.8	34.2	37.4	19
		+/- 2.5	+/- 4.2	+/- 5.7	+/- 7.2	+/- 7.6	+/- 9.1	+/- 10.7	19
EC-IDF	2 h	13.0	17.5	20.5	23.4	24.3	27.1	29.8	19
		+/- 2.1	+/- 3.5	+/- 4.8	+/- 6.0	+/- 6.4	+/- 7.7	+/- 9.0	19
UPDATE	6 h	6.9	8.9	10.2	11.5	11.9	13.1	14.3	34
		+/- 0.7	+/- 1.2	+/- 1.6	+/- 2.0	+/- 2.1	+/- 2.5	+/- 3.0	34
UPDATE	12 h	4.5	5.6	6.4	7.1	7.3	8.0	8.7	34
		+/- 0.4	+/- 0.7	+/- 0.9	+/- 1.1	+/- 1.2	+/- 1.4	+/- 1.7	34
UPDATE	24 h	2.8	3.5	4.0	4.4	4.6	5.0	5.5	36
		+/- 0.2	+/- 0.4	+/- 0.6	+/- 0.7	+/- 0.7	+/- 0.9	+/- 1.0	36

* 6-hr data were used for the update: shorter durations were not updated

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	21.9	29.0	33.6	38.1	39.5	43.9	48.3
Std. Dev. /Écart-type (RR)	17.3	23.3	27.2	31.0	32.2	35.9	39.6
Std. Error/Erreur-type	3.2	4.1	4.8	5.4	5.6	6.3	7.0
Coefficient (A)	16.6	21.6	25.0	28.2	29.2	32.3	35.4
Exponent/Exposant (B)	-0.515	-0.526	-0.531	-0.535	-0.536	-0.539	-0.541
Mean % Error/% erreur moyenne	7.4	8.2	8.6	8.9	8.9	9.1	9.3

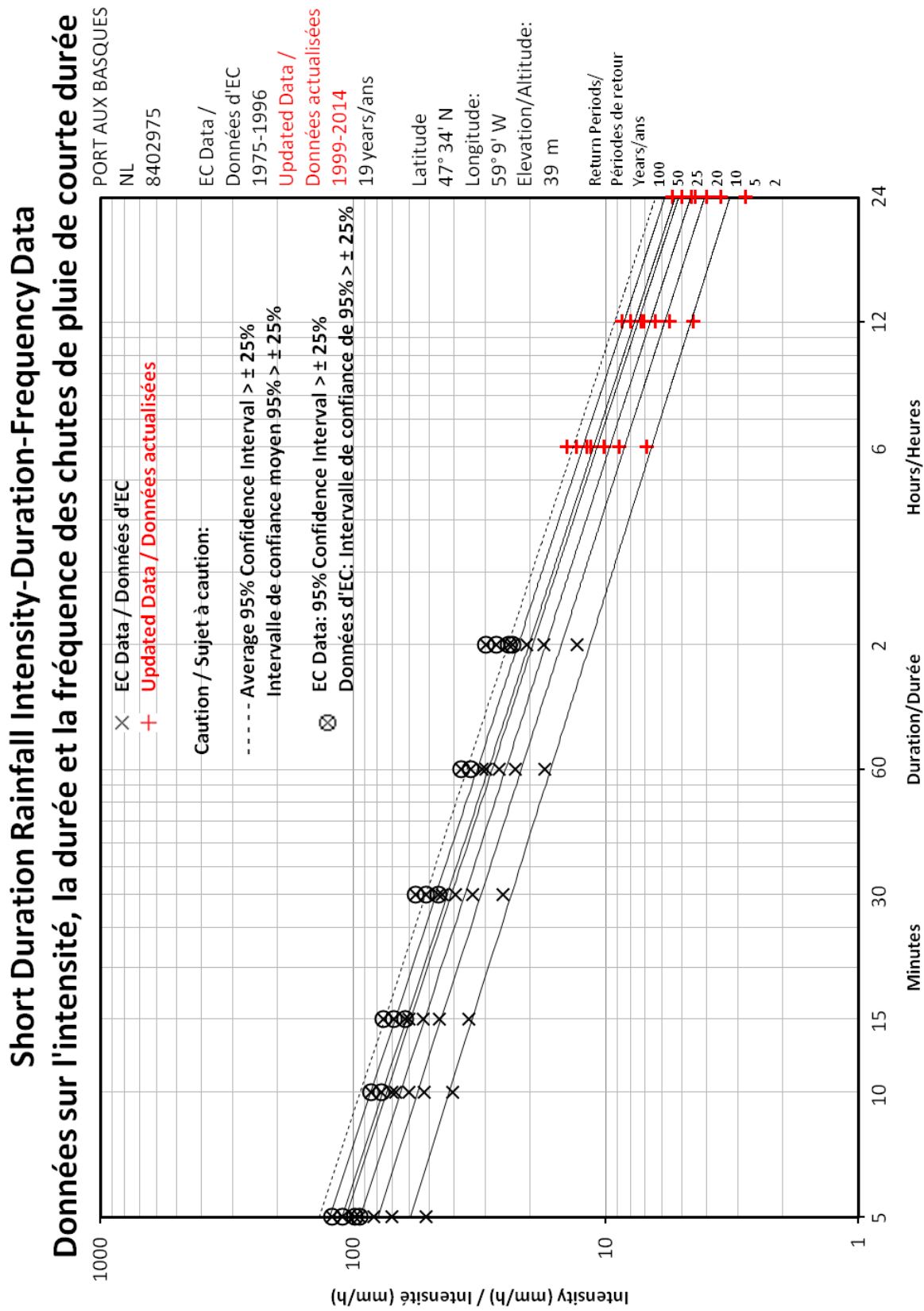


Figure 9.1 Port Aux Basques IDF Curve - Updated

Quantile-Quantile : PORT AUX BASQUES, NL 8402975

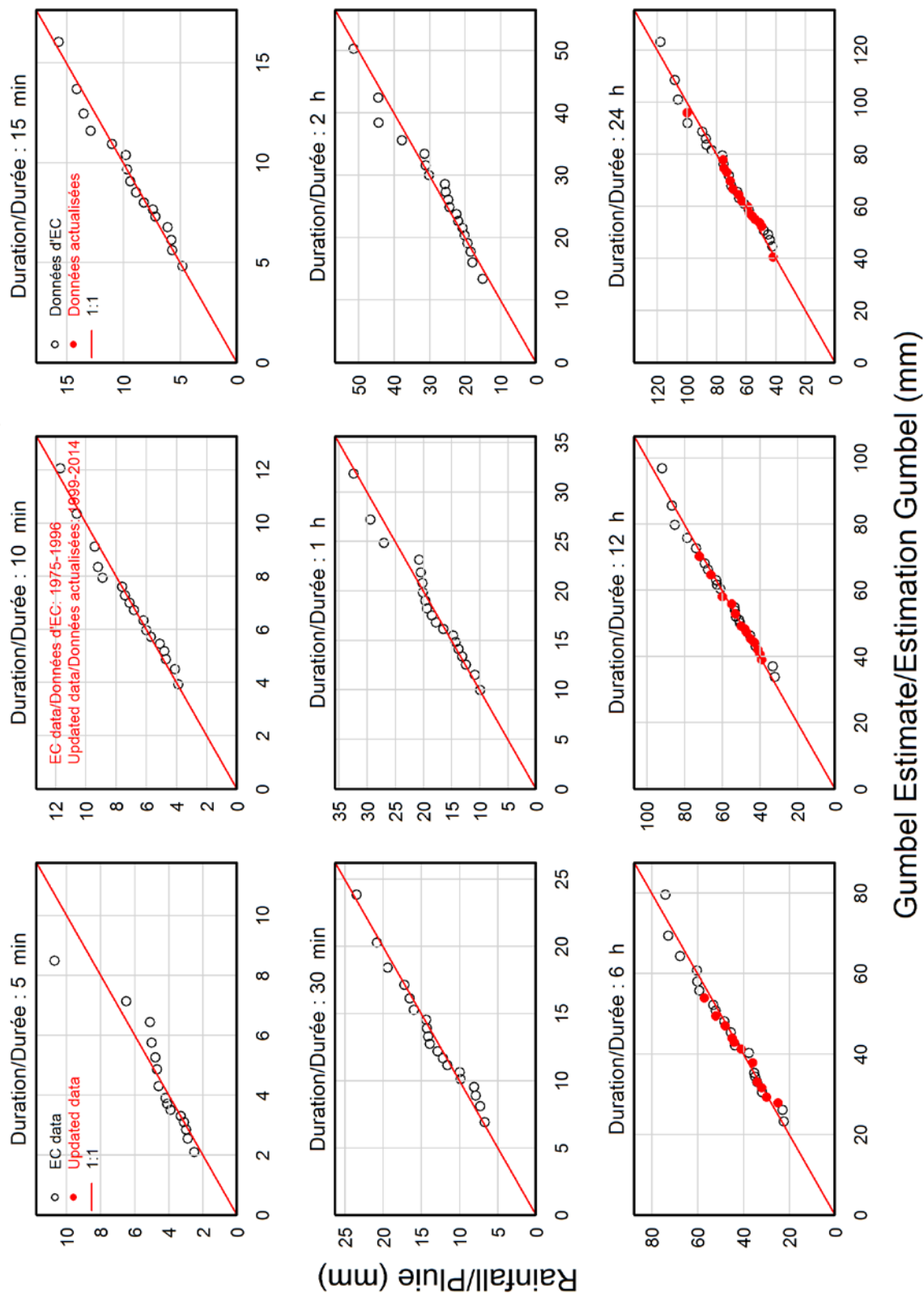
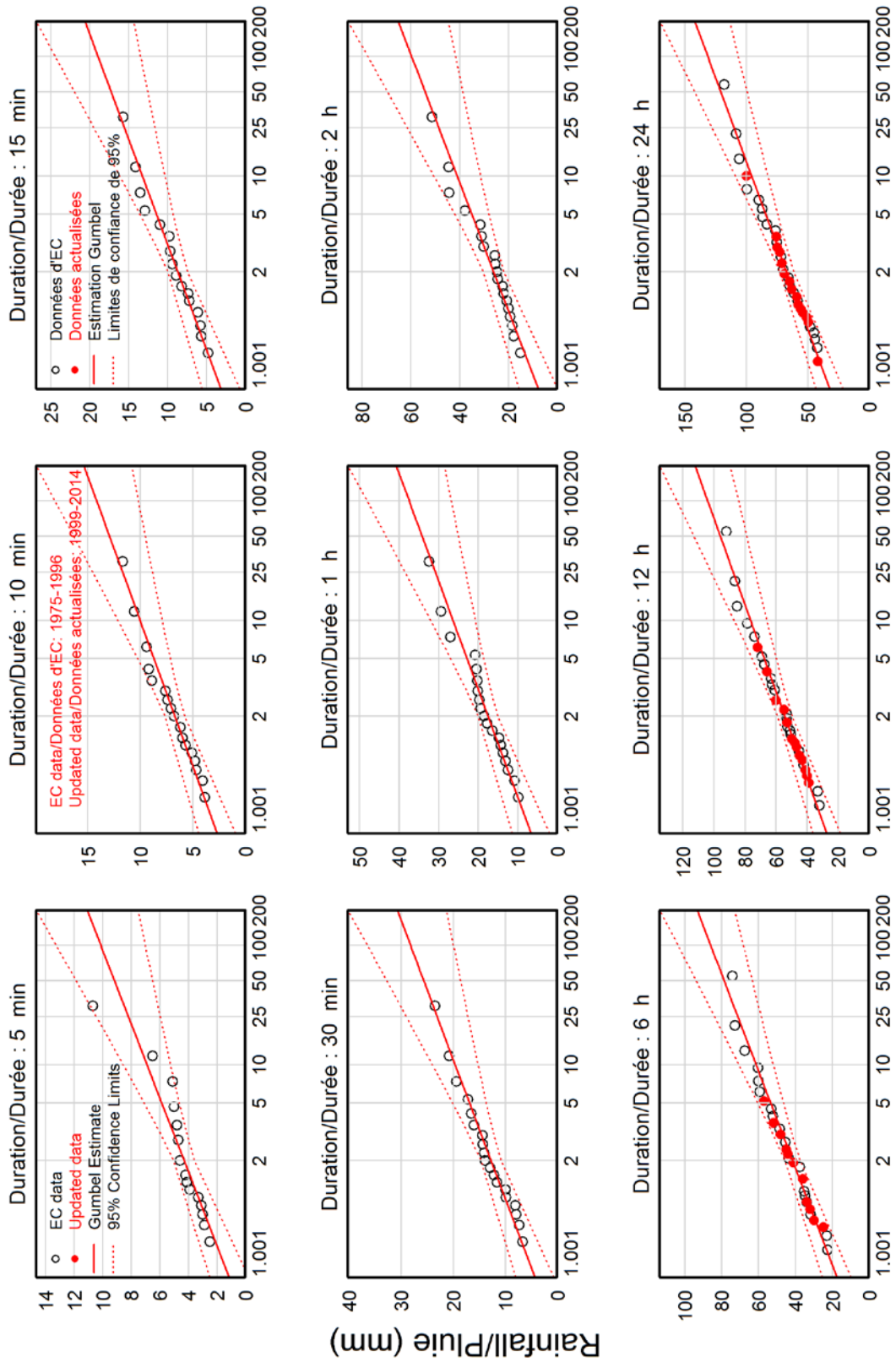


Figure 9.2 Port Aux Basques Quantile-Quantile Plot – Updated

Return Level/Niveau de retour : PORT AUX BASQUES, NL 8402975



Return Period/Période de retour (years/années)

Figure 9.3 Port Aux Basques Return Level Plot - Updated

Trend/Tendance : PORT AUX BASQUES, NL 8402975

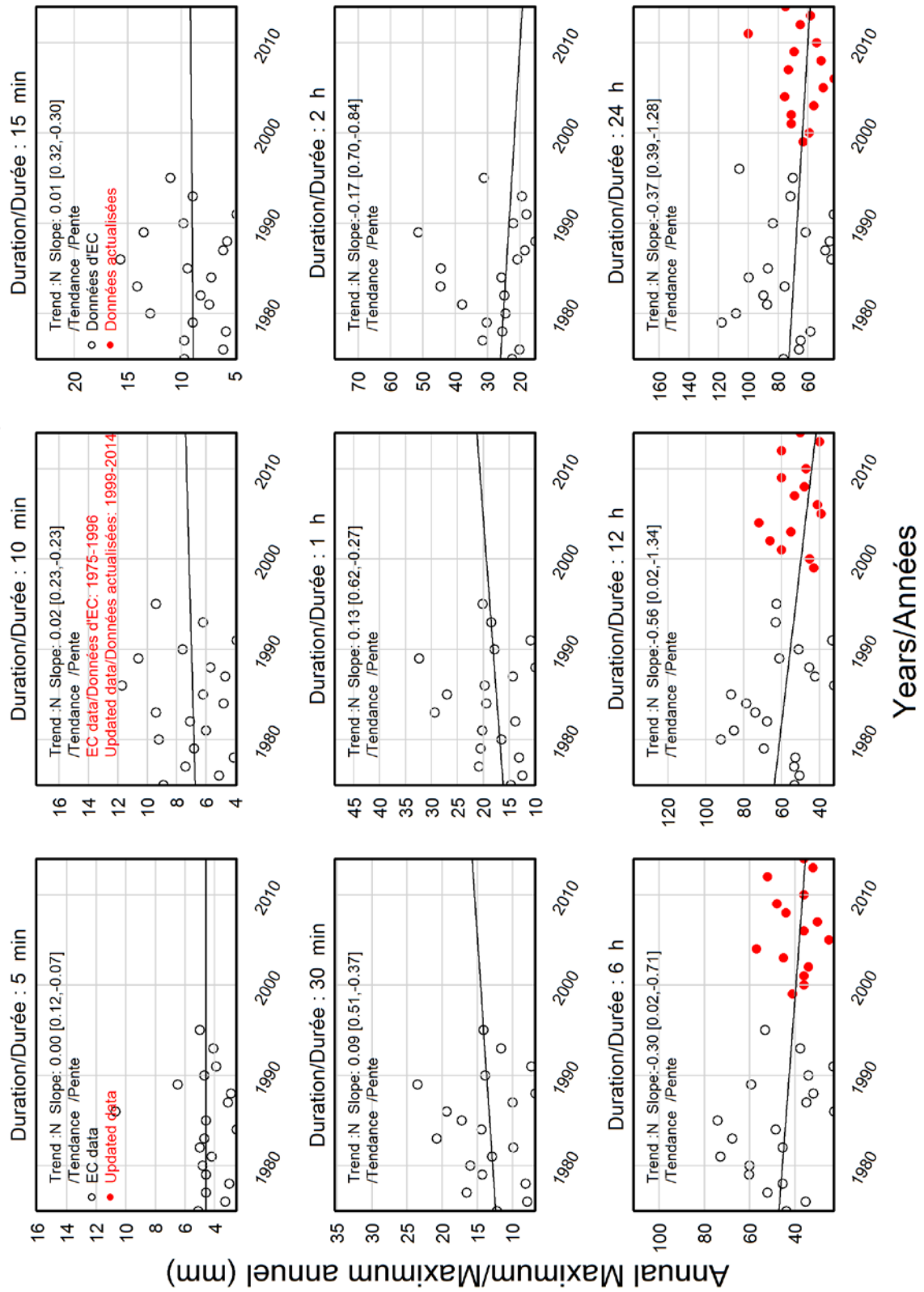


Figure 9.4 Port Aux Basques Trend Plot – Updated