

WATER QUALITY OBSERVATION PROGRAM

OTTY LAKE 1972 – 2002

ADDENDUM.2

Lorne Gold

The addendum to the full report contains figures showing characteristics of the 32 stations that are considered to be visually instructive for the interpretation of the results of the analysis of thirty years of measurement of the fecal count. It has four sections, the titles of which are given below. Addendum.2, Addendum.3, and Addendum.4 include a table giving the values plotted in each respective set of figures. Addendum.1 presents lognormal probability plots for all the fecal counts for each station. This set of 5,493 counts is held by the Otty Lake Association.

The figures in Addendum.2 give the best fit to the first 25 years for the annual average lognormal fecal counts for each station. It was found that annual average lognormal fecal counts for the last five years were significantly lower than would have been expected from the extrapolated best-fit line to the first 25 years of measurements. The reason for this is not known at this time.

The station annual average lognormal fecal counts for the 30 years of the program are presented in the table that begins on page 2

Addendum.1 Lognormal probability plots of the measured fecal counts for each station.

Addendum.2 Plots showing the dependence of the annual average lognormal fecal count on years for each station.

Addendum.3 Bar charts showing the correlation of the station annual average lognormal fecal counts for the 30-year period with the corresponding values for all the other stations.

Addendum.4 Bar charts showing the correlation between the station annual average lognormal fecal counts for a given year with the corresponding values for all other years.

Year Stn	73	74	75	76	77	78	79	80	81	82	83	84	85	86 #	Year Stn
1	0.67	0.37	0.67	0.83	0.62	0.96	1.43	0.71	1.62	1.49	1.42	2.6	0.69	0.92	2 1
2	0.38	1.01	0.2	1.11	1.29	1.04	0.94	0.69	1.55	1.41	1.11	1.5	0.69	1.04	2 2
3	0.54	0.89	1.2	1.84	1.75	1.46	1.14	1.44	1.04	0.92	1	2.65	1.27	1.55	2 3
4	0.76	0.35	0.12	0.41	1.01	0.51	0.77	0.76	1.19	1.11	0.69	1.15	1.1	0.69	1 4
5	0.06	0.62	0.76	0.67	1.32	0.86	0.55	0.65	0.81	0.92	0.82	1.15	0.69	0.81	1 5
6	0.42	0.21	0.2	0.46	0.54	0.69	0.69	0.81	0.69	0.92	0.96	0.69	0.69	0.83	2 6
7	0.48	1.12	0.87	0.15	1.06	1.42	0.91	0.58	1.08	0.81	0.82	1.5	0.69	0.69	1 7
8	0.13	0.56	0.55	0.52	1.87	1.07	0.83	0.71	1.11	1.19	0.69	3.11	1.44	1.89	2 8
9	0.25	1.26	0.35	0.73	1.61	1.36	1.1	0.73	1.02	0.69	1.05	2.85	2.04	1.84	1 9
10	0.38	0.87	0.8	0.58	1.95	1.77	1.33	0.46	1.08	0.92	0.92	1.15	0.92	1.22	1 10
11	0.27	1	0.73	0.64	0.56	1.01	1.27	0.46	0.69	1.27	1.35	1.15	0.69	1.34	1 11
12	0.84	0.91	0.8	0.35	0.66	2.29	1.59	0.9	0.69	0.99	0.69	1.84	2.35	1.5	1 12
13	0.19	0.56	0.23	0.85	1.26	1.15	1.33	1.03	0.69	2.04	0.96	1.7	1.31	1.22	1 13
14	0.34	0.77	0.71	0.95	0.89	0.95	1.02	0.61	1.4	0.88	0.82	1.7	0.69	1.11	1 14
15	0.63	0.62	0.33	0.99	0.54	0.63	0.97	0.46	1.13	0.69	1.05	2.65	0.69	0.92	1 15
16	0.43	0.61	1.02	0.31	0.86	1.25	0.77	0.46	0.69	1.42	0.96	2.98	1.15	1.04	1 16
17	0.98	1.77	0.97	0.62	1.19	0.81	1.3	0.67	1.12	1.41	1.42	1.23	1.75	0.92	2 17
18	1.91	0.71	0.35	0.35	0.62	0.9	0.23	0.46	0.85	0.81	0.88	1.3	1.47	0.92	2 18
19	1.25	0.92	0.43	0.69	1.52	1.47	1.21	0.97	0.95	0.69	2.07	1	0.82	1.16	3 19
20	1.66	1.08	0.41	0	1.04	0.74	0.35	0.58	0.69	0.88	1.2	1	1.15	1.27	3 20
21	1.92	1.31	1.01	0.83	1.72	1.19	0.91	0.85	0.95	1.68	1.06	1.3	2.28	1.27	2 21
22	2.03	0.66	0.69	1.04	1.86	1.26	1.71	1.17	0.79	1.73	1.28	2.07	1.66	1.42	2 22
23	0.8	0.58	0.38	0.69	1.16	1.1	0.65	0.46	1.18	0.81	2.66	1	1.21	1.75	2 23
24	1.04	1.27	0.37	1.59	1.04	0.66	1.13	0.99	1.25	0.88	1.24	2.47	1.12	1.68	2 24
25	1.05	1.31	0.45	0.35	0.79	0.83	1.01	0.67	1.19	1.77	1.7	1.54	1.45	1.04	2 25
26	1.23	0.64	0.95	1	1.4	0.52	0.73	0.88	0.69	1.71	0.88	2.7	1.77	0.92	2 26
27	0.79	0.58	0.89	0.52	0.76	0.73	0.41	0.97	0.99	0.96	1.06	1	1.41	1.98	2 27
28	1.19	1.1	1.17	0.55	0.66	0.48	1.15	0.58	1.09	1.22	2.33	1.54	2.43	1.34	2 28
29	1.29	0.74	0.56	1.85	1.35	1.16	2.1	1.3	1.01	1.22	1.28	1.23	1.64	0.92	2 29
30	1.35	0.83	0.37	1.82	1.01	0.46	1.02	0.65	0.69	1.16	1.38	1	1.95	1.25	2 30
31	0.98	0.51	0.68	0.17	1.49	1.09	1.18	0.92	1.9	1.04	1.2	2.3	2.14	1.19	2 31
32	1.08	0.94	0.33	0.67	1.1	1.15	0.53	0.35	1.67	0.69	1.02	2.21	1.77	1.04	1 32
Lake an av ln(fc)	0.85	0.83	0.61	0.75	1.14	1.03	1.01	0.75	1.05	1.14	1.19	1.73	1.35	1.21	2

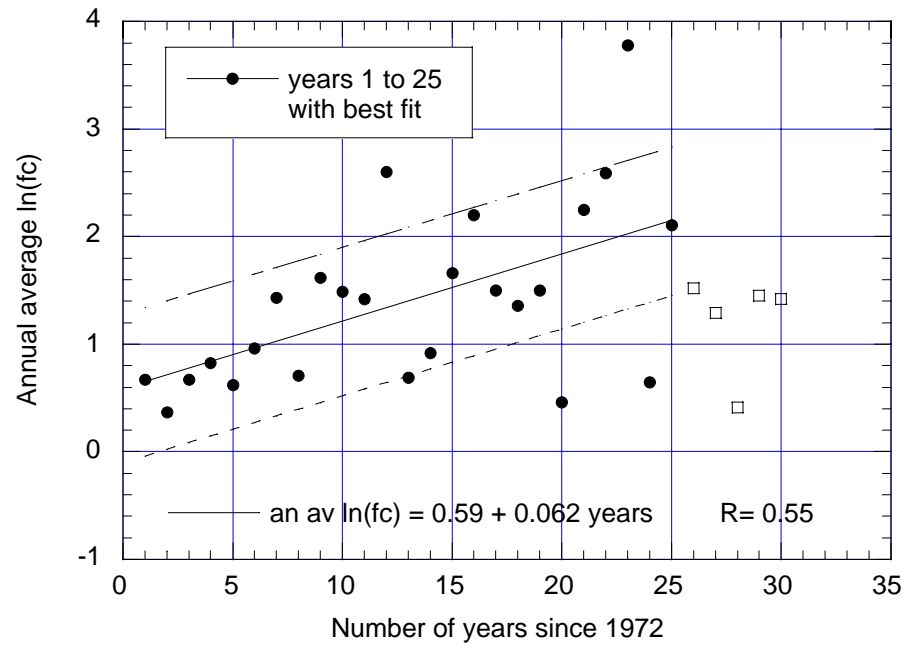
Annual average ln(fc) for each station for 1973 to 2002

Bottom line: annual average ln(fc) for the lake

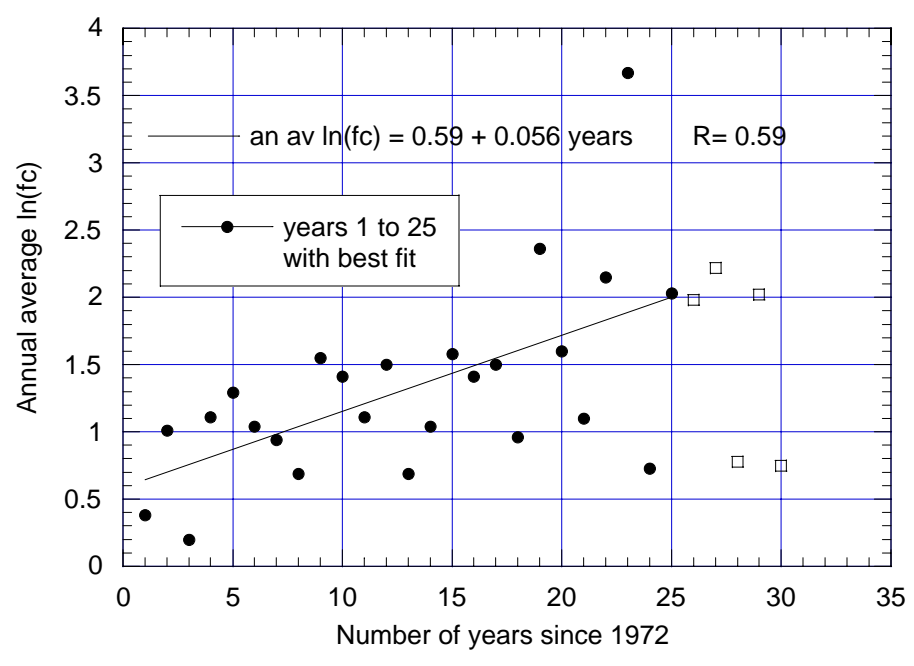
Second to last column of table (page 4): station 30 year average ln(fc)

Year Stn	87	88	89	90	91	92	93	94	95	96	97	98	99	0	Year Stn
1	1.66	2.2	1.5	1.36	1.5	0.46	2.25	2.59	3.78	0.65	2.11	1.52	1.29	0.41	1
2	1.58	1.41	1.5	0.96	2.36	1.6	1.1	2.15	3.67	0.73	2.03	1.98	2.22	0.78	2
3	1.72	1.68	1.87	2	1.5	1.11	2.25	2.04	3.52	2.84	2.87	0.83	1.83	0.84	3
4	1.1	1.3	1.1	1.19	1.1	2.11	2.25	2.24	2.84	1.19	1.71	1.06	0.35	0.12	4
5	1.34	1.5	1.1	1.36	1.1	1.06	1.7	1.33	2.19	2.24	1.23	0.6	0.35	0	5
6	1.56	1.1	1.1	1.36	1.1	0.23	2.05	1.96	1.93	2.24	1.06	1.6	0.41	0.18	6
7	1.1	1.1	2.37	1.19	1.1	1.06	1.1	1.56	0.96	1.4	0.69	0.69	0.62	0.18	7
8	1.82	1.41	1.5	0.96	2.27	1.53	3.33	2.3	2.7	3.4	1.66	1.16	0.58	0.56	8
9	1.1	1.5	1.5	1.83	2.13	2.21	1.7	2.42	2.31	1.73	1.92	1.06	0.85	1.49	9
10	1.1	1.1	1.1	0.96	1.1	1.64	1.1	1.43	1.19	2.52	1.69	0.46	0.8	0.3	10
11	1.1	1.68	1.1	1.6	1.1	0	1.1	2.27	1.06	1.89	2.03	0.46	0.65	0	11
12	1.34	1.3	2.02	2.3	1.1	1.89	2.39	1.87	1.68	2.76	1.11	0.23	1.01	0.12	12
13	1.34	2.34	2.53	1.36	1.1	0.92	2.39	2.27	2.06	1.68	1.69	1.79	0.56	0.79	13
14	1.34	1.3	1.5	0.96	1.5	0.23	1.1	1.6	1.6	1.54	2.11	1.98	1.13	0.41	14
15	1.34	2	1.9	2.06	1.1	0.92	1.7	1.73	1.19	1.85	1.77	0.69	1.25	0.12	15
16	1.34	1.1	1.9	1.43	1.1	0.77	1.7	2.19	1.43	1.33	1.45	1.94	1.36	0.73	16
17	1.5	1.87	1.1	1.5	1.9	1.06	3.39	2.79	2.28	1.5	1.25	1.34	1.57	1.6	17
18	1.62	2	1.5	1.1	1.5	0.23	1.73	1.67	1.06	1.36	0.6	0.69	0.5	0.46	18
19	2.61	2.05	2.73	1.5	1.7	2.64	3.03	1.24	1.65	1.69	0.88	0.83	1.61	0.41	19
20	3.16	1.4	2.13	1.1	1.7	1.55	2.8	0.58	2.56	1.29	1.3	0.46	0.71	0.57	20
21	1.62	3.47	3.35	1.5	1.1	2.37	2.4	2.39	2.92	1.3	2.1	2.35	2.74	1.87	21
22	1.53	1.8	1.87	1.5	1.1	2.94	2.46	2.4	2.59	1.3	1.06	2.24	1.46	0.95	22
23	1.68	2.05	1.1	1.1	1.7	0	2.04	2.71	2.34	1.33	0.46	1.23	0.76	0.48	23
24	2.38	2.05	1.73	1.5	1.7	0.46	3.36	1.54	2.53	2.24	0.73	2.64	1.21	0.46	24
25	1.77	1.87	1.1	1.73	1.73	1.17	3.32	1.56	2.13	1.23	1.34	1.55	0.83	0.67	25
26	1.68	1.57	1.1	1.1	1.1	1.83	3.21	2.23	1.39	1.96	1.54	2.3	1.45	0.82	26
27	1.62	2.45	1.1	1.5	1.5	2.18	3.44	1.83	2.94	1.92	1.25	2.29	1	2.15	27
28	2.2	1.89	1.1	1.19	3.22	2.29	2.44	1.65	2.63	2.19	0.88	3.21	1.58	1.13	28
29	1.8	1.87	1.87	0.96	1.1	1.34	1.9	1.56	1.77	3.26	1.19	0.88	1.43	0.91	29
30	1.62	2.89	1.73	1.36	3.22	0.83	2.27	2.98	2.15	1.77	2.3	1.23	1.21	0.48	30
31	1.65	2.22	1.5	1.77	1.5	1.11	3.15	1.29	3.01	1.9	2.54	1.89	1.49	0.71	31
32	1.41	2.05	1.5	1.6	1.5	2.44	4.3	3.07	2.96	3.27	0.37	1.62	2.36	0.63	32
Lake an av ln(fc)	1.62	1.8	1.63	1.4	1.55	1.32	2.33	1.98	2.22	1.86	1.47	1.4	1.16	0.67	

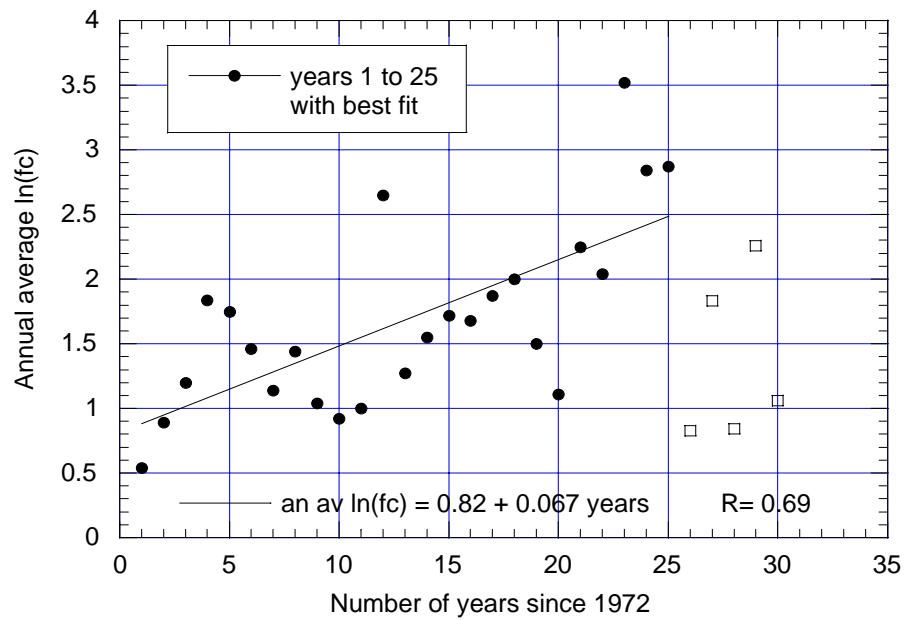
Year Stn	1	2	Stn 30-year av ln(fc)	Stn
1	1.45	1.37	1.47	1
2	2.02	0.75	1.59	2
3	2.26	1.06	1.94	3
4	0.35	0.82	1.56	4
5	0.78	0.9	1.62	5
6	0.73	0.95	1.75	6
7	1.47	0.77	1.87	7
8	1.07	1.29	2.51	8
9	1.15	0.78	2.57	9
10	1.03	0.78	2.37	10
11	0.46	0.99	2.41	11
12	0.76	1.06	2.86	12
13	0.87	0.87	3.02	13
14	0.98	0.8	2.92	14
15	1.1	0.78	3.09	15
16	1.01	0.93	3.29	16
17	2.34	1.25	3.65	17
18	0.71	0.45	3.31	18
19	1.5	1.03	3.92	19
20	1.16	0.87	3.85	20
21	3.32	1.22	4.50	21
22	1.3	1.12	4.40	22
23	1.68	0.87	4.24	23
24	2.43	0.92	4.62	24
25	2.02	1.15	4.63	25
26	2.07	0.85	4.80	26
27	1.84	1.14	5.00	27
28	2.18	0.95	5.26	28
29	1.87	1.56	5.21	29
30	2.03	1.23	5.38	30
31	1.6	1.47	5.63	31
32	1.32	1.35	5.76	32
Lake an av ln(fc)	1.46	1.01	1.27	



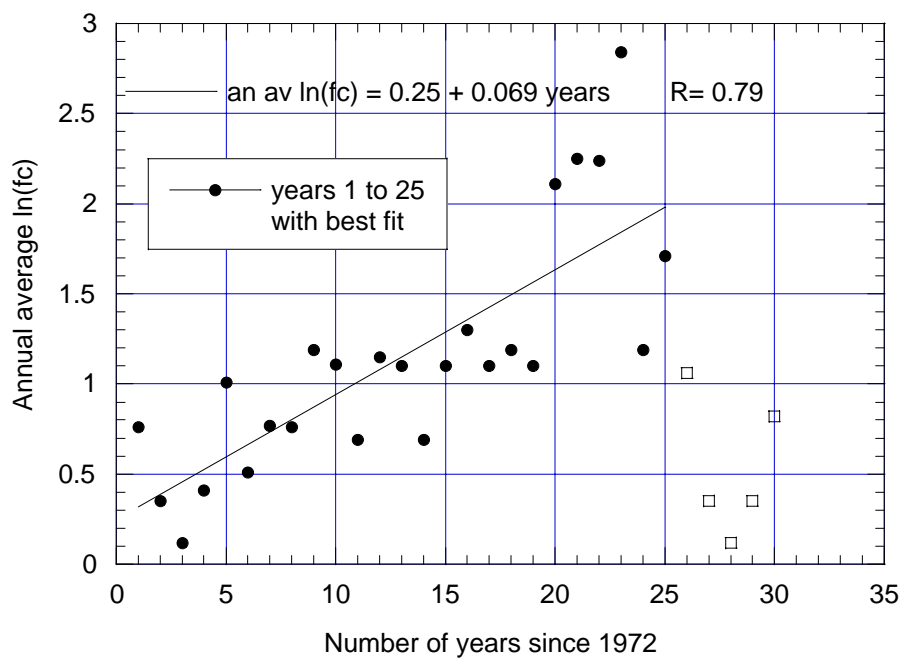
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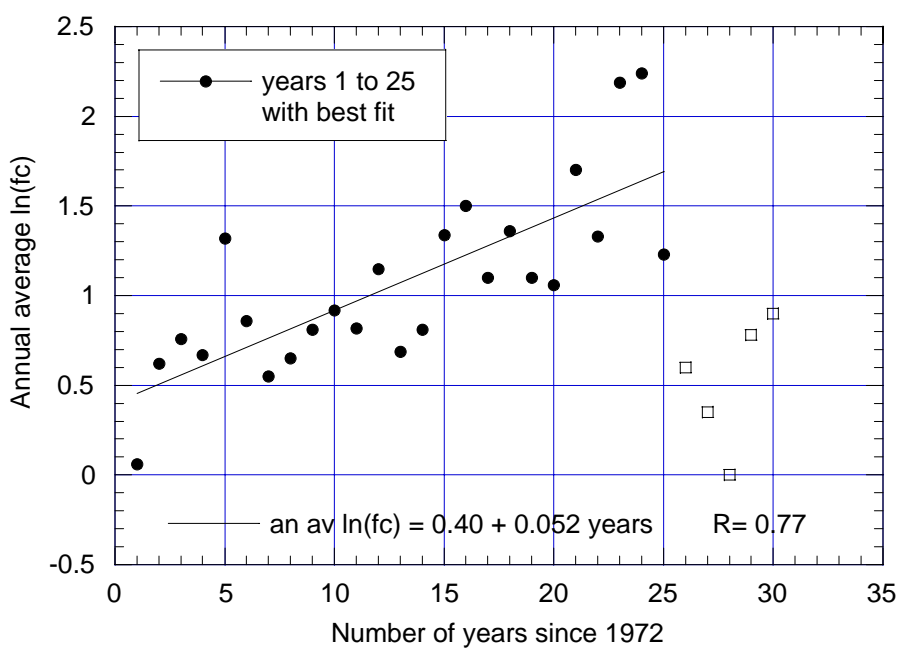
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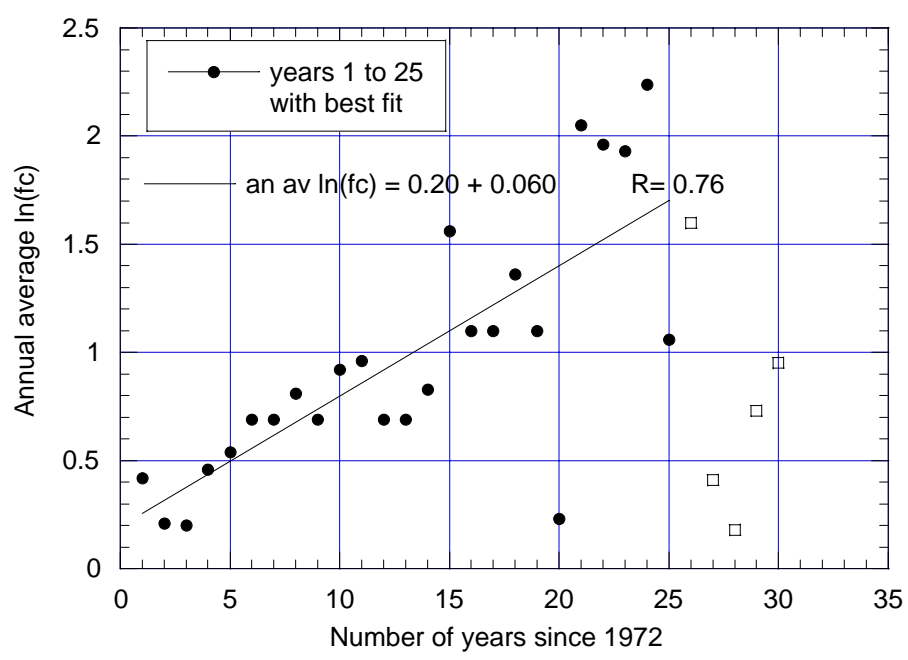
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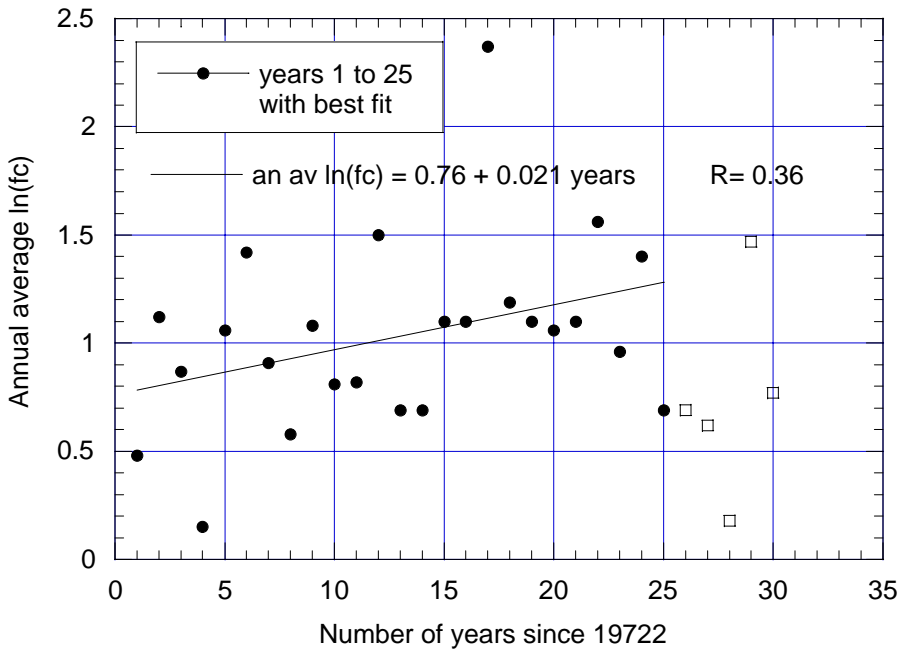
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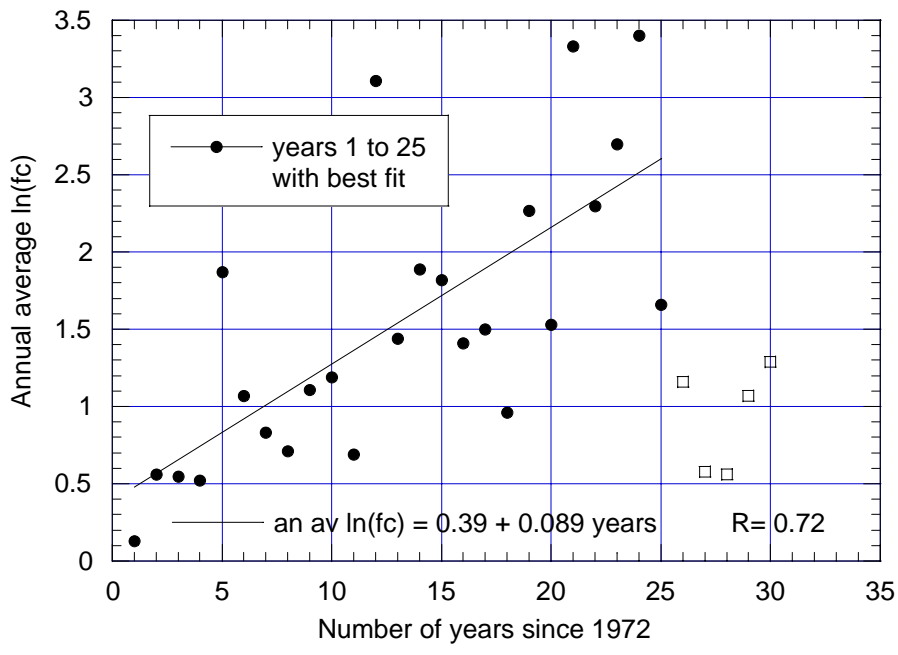
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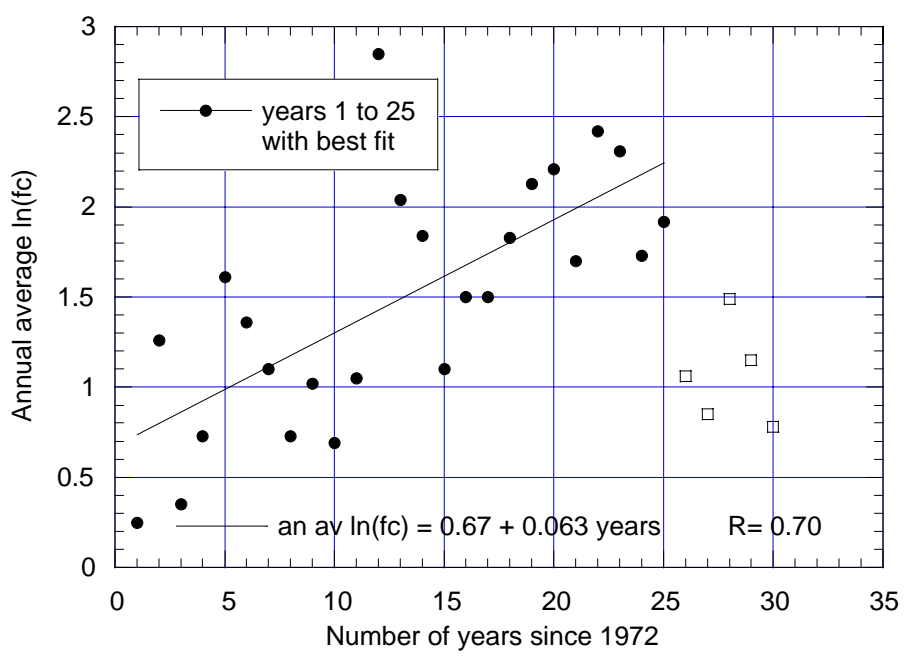
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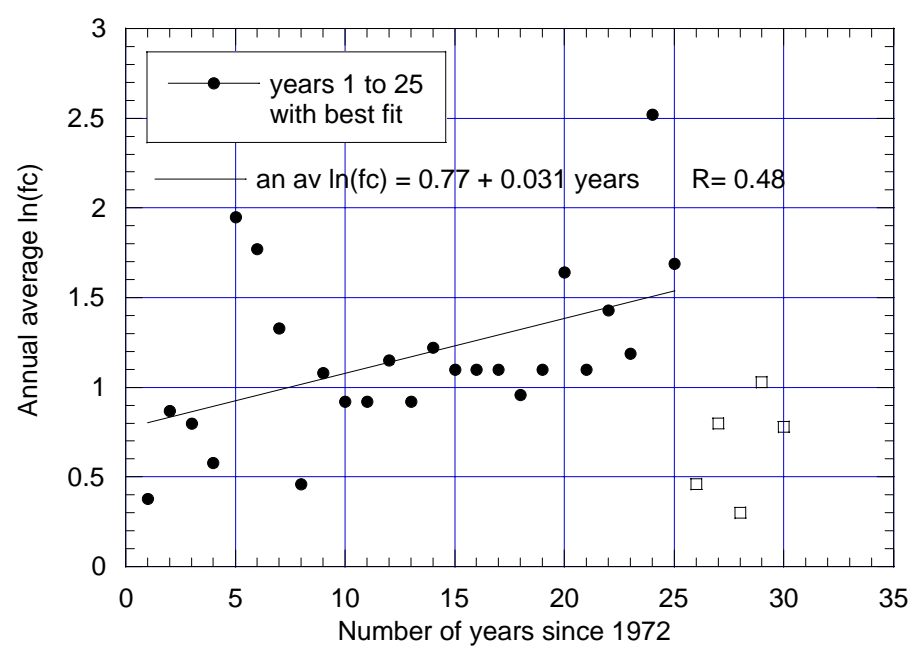
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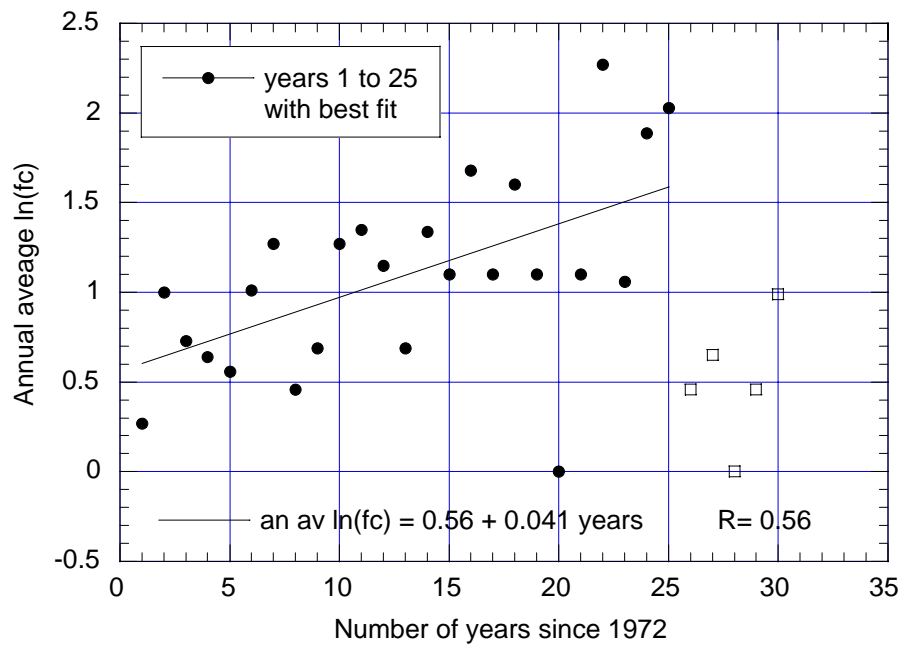
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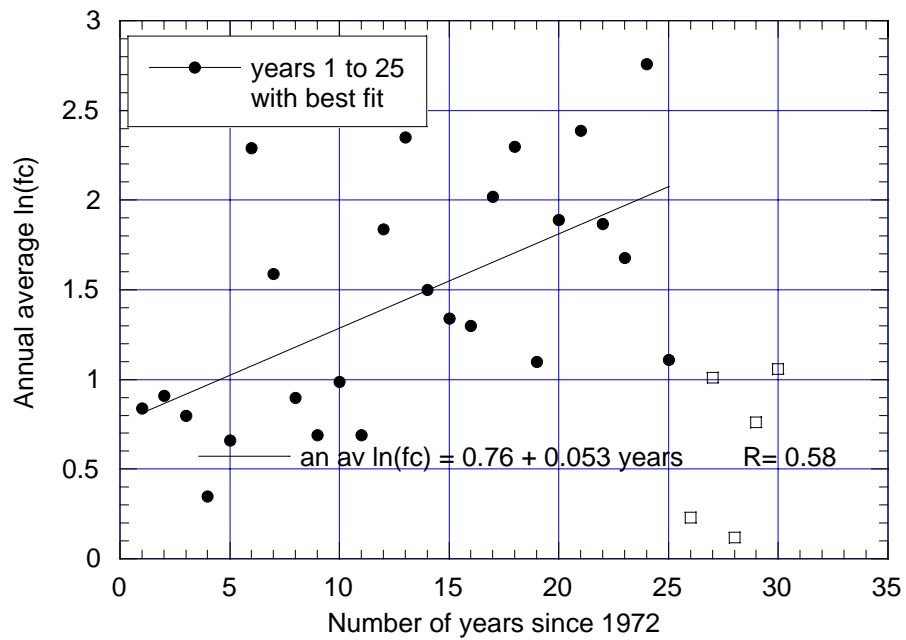
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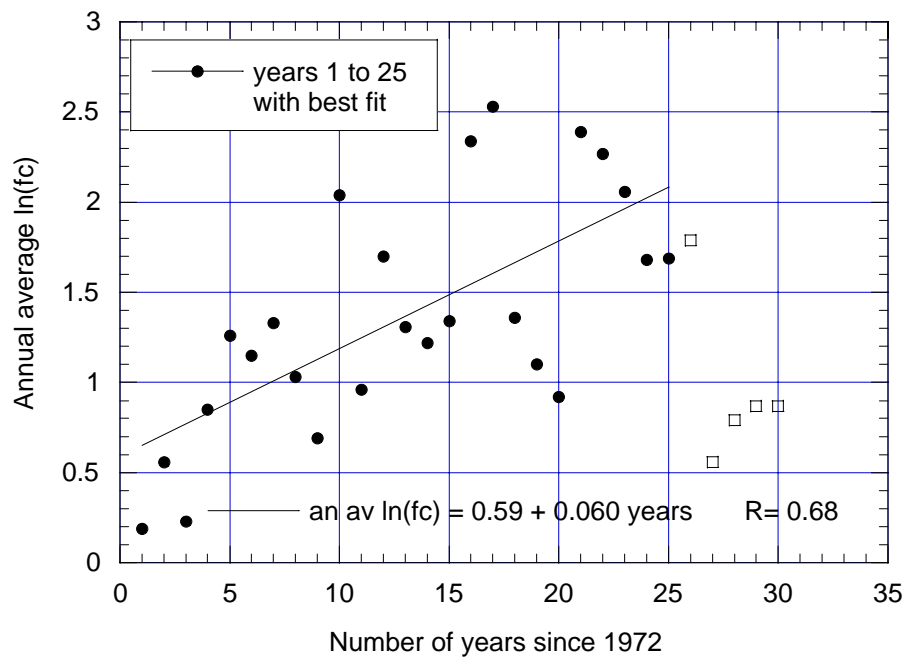
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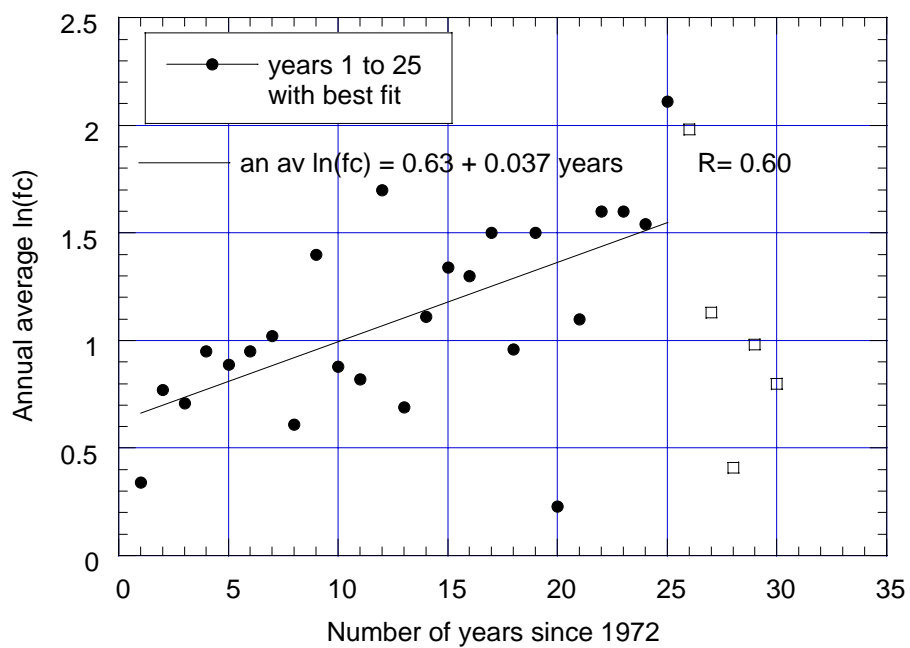
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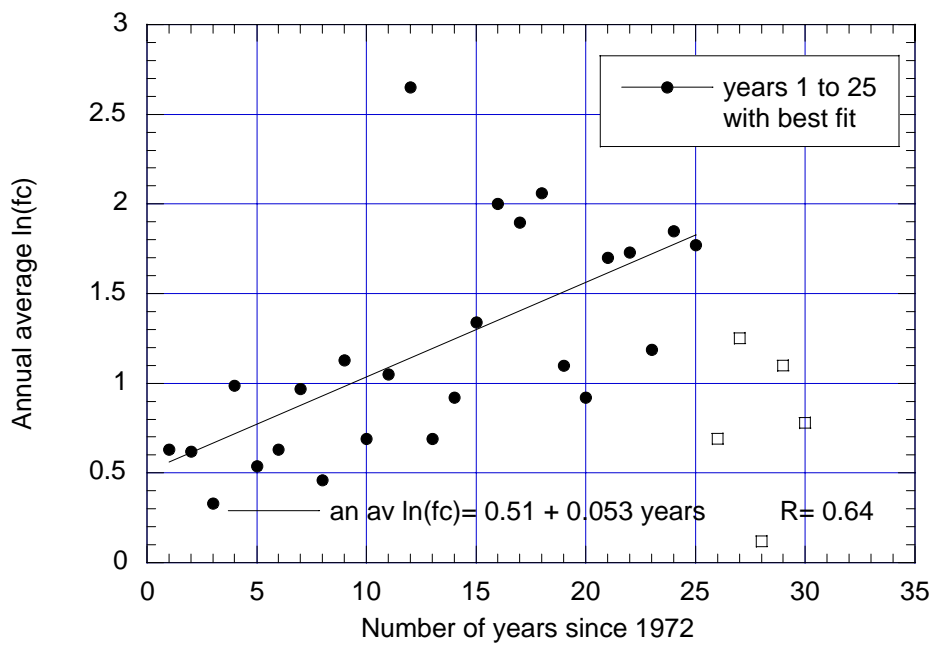
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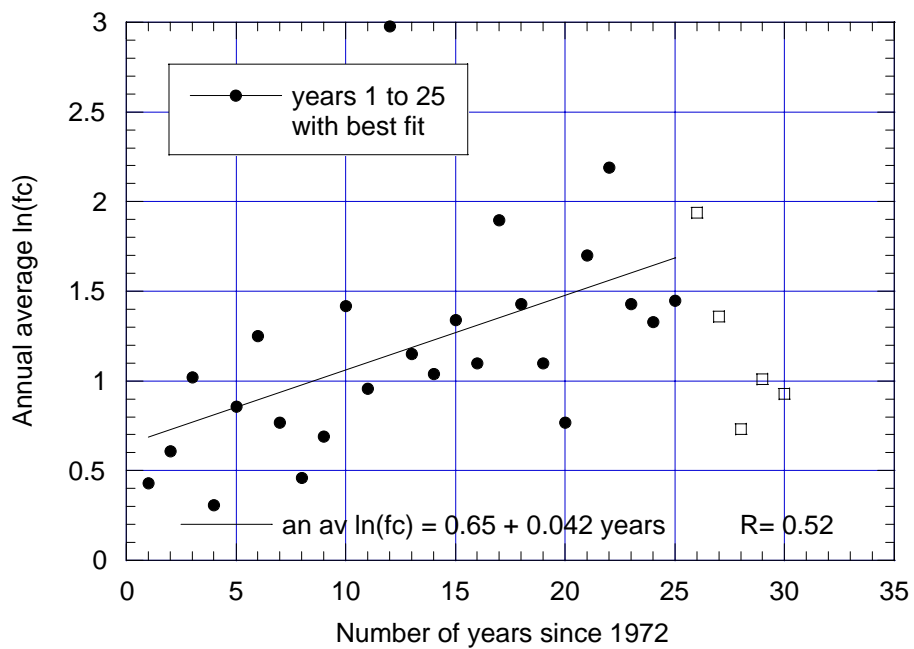
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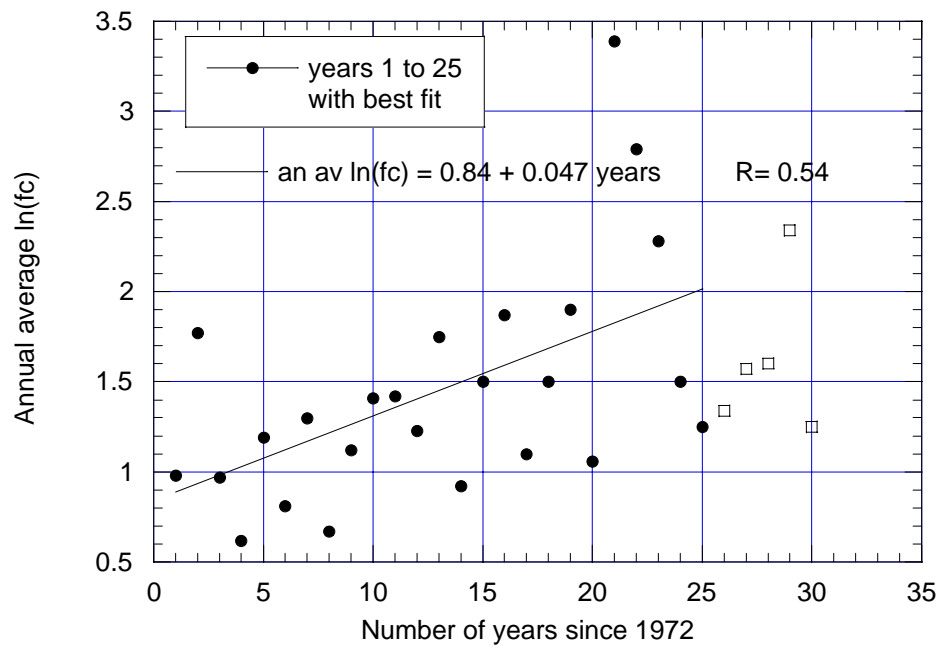
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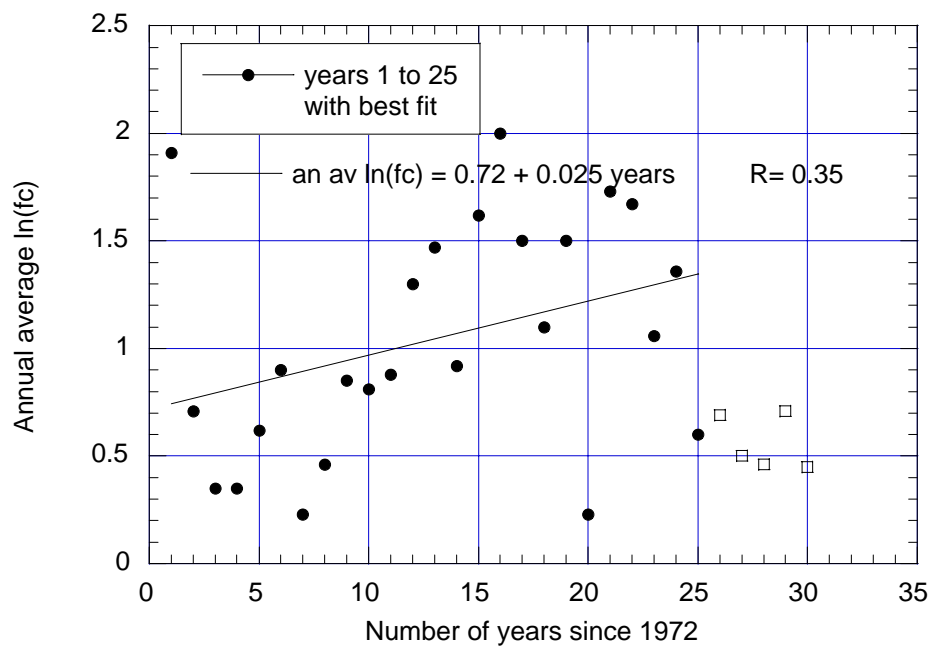
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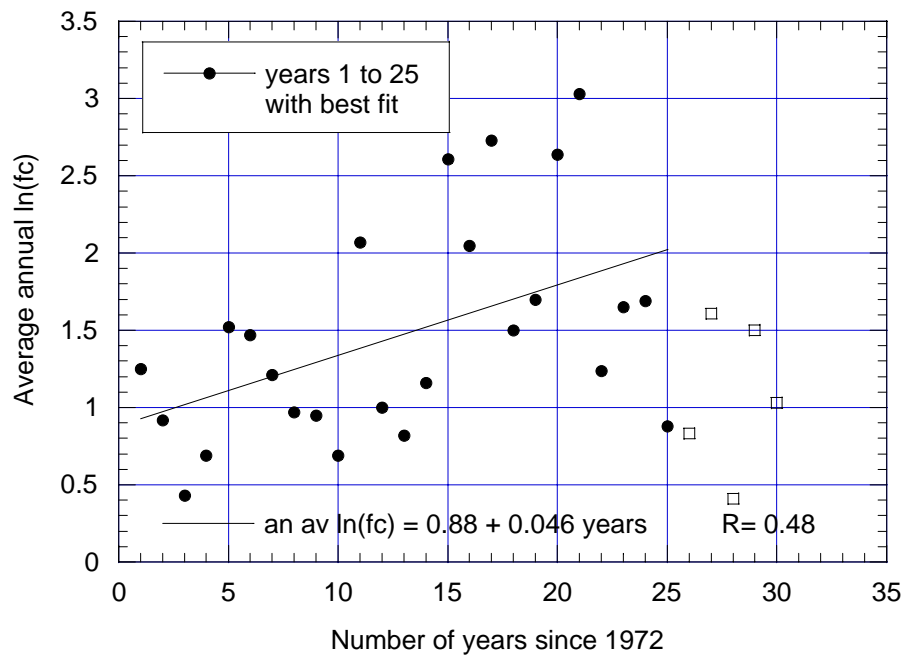
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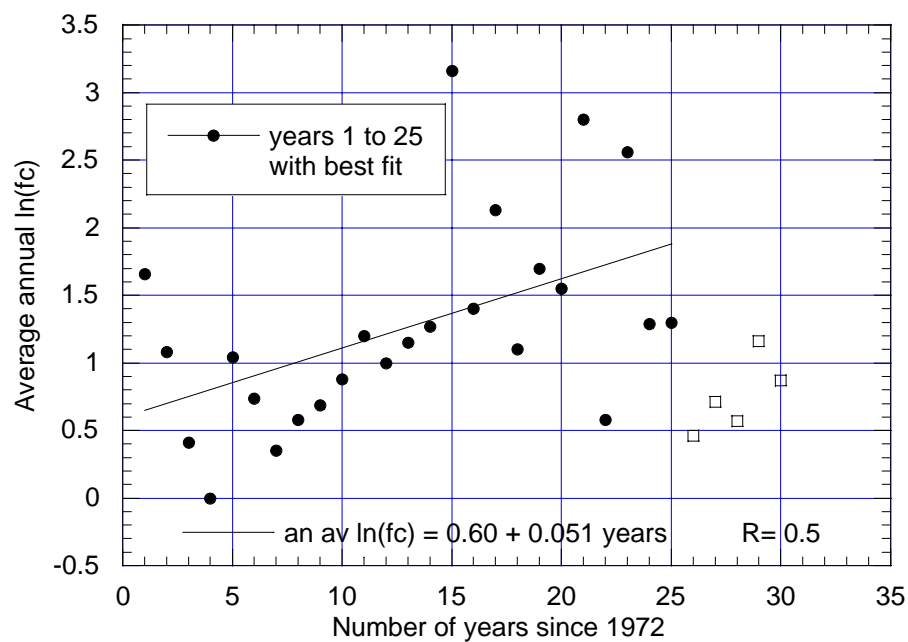
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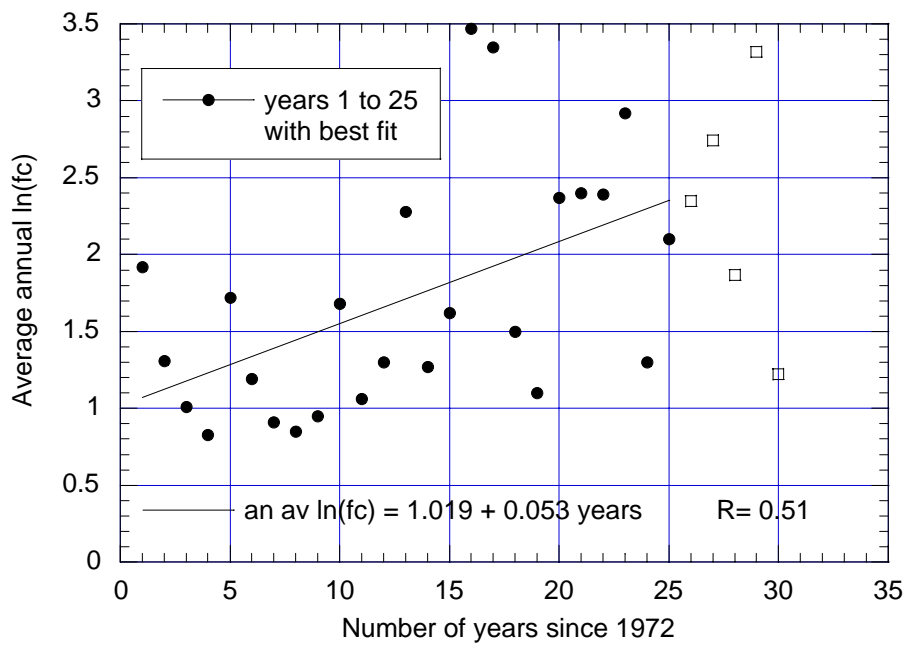
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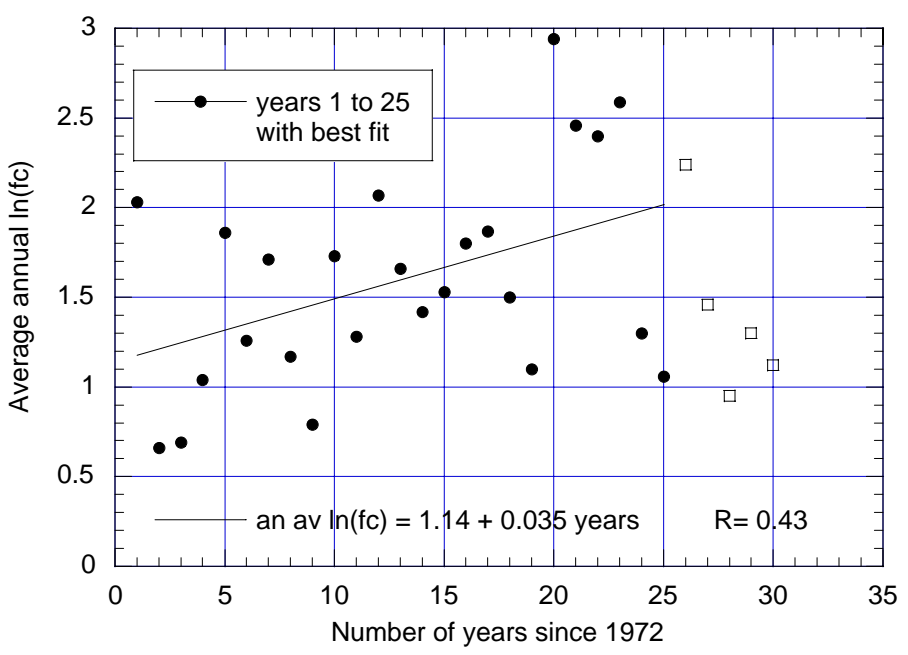
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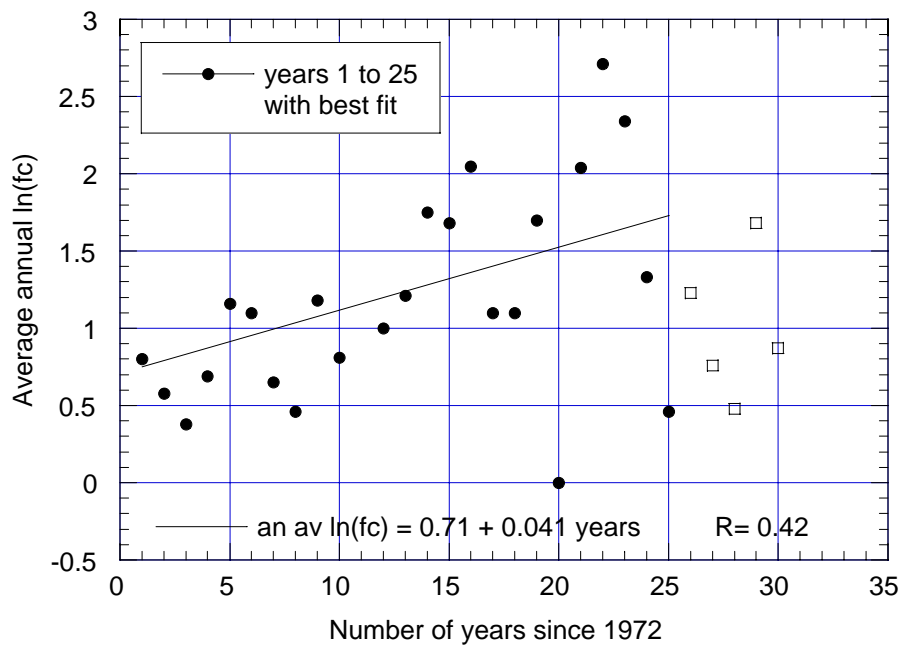
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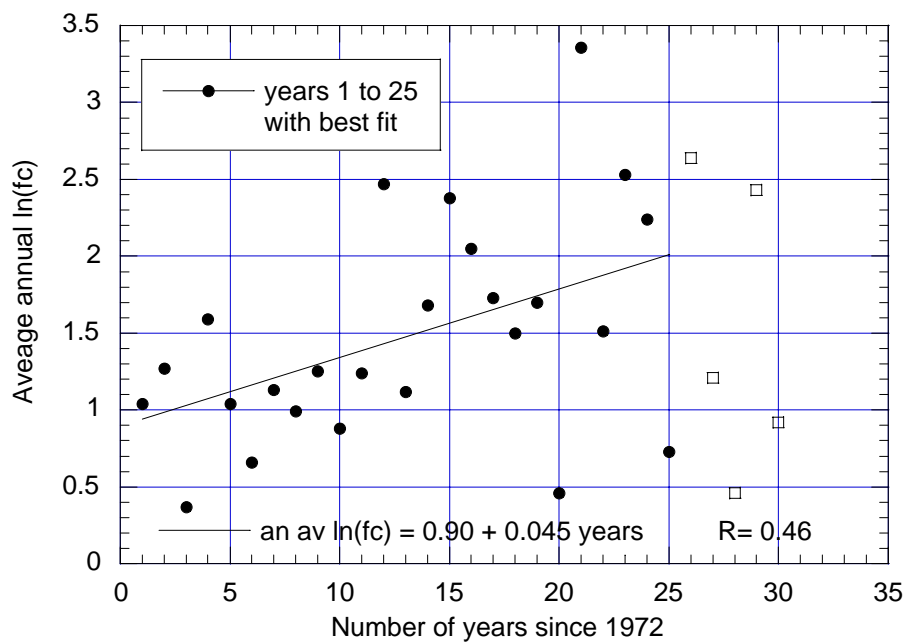
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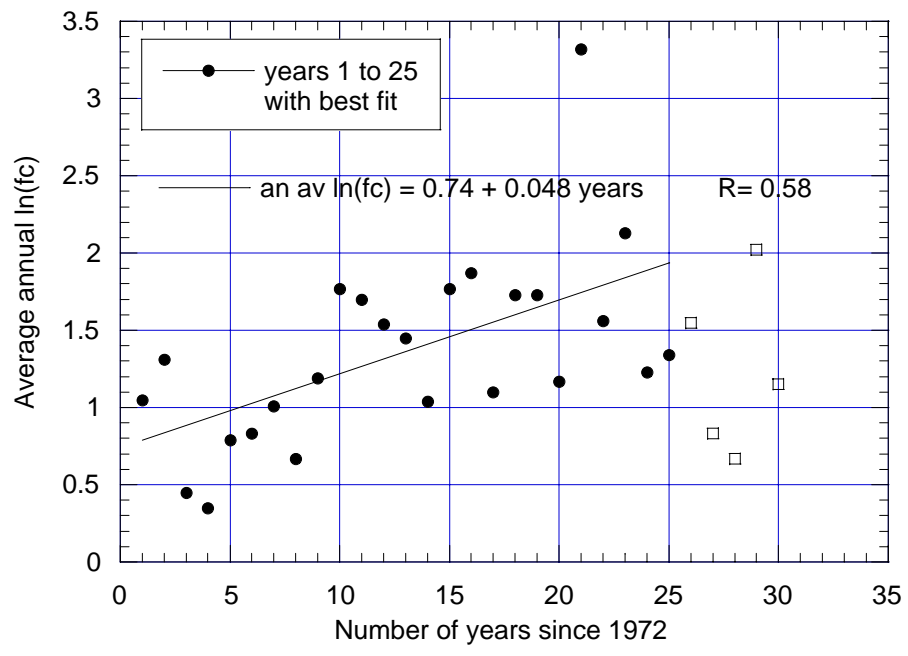
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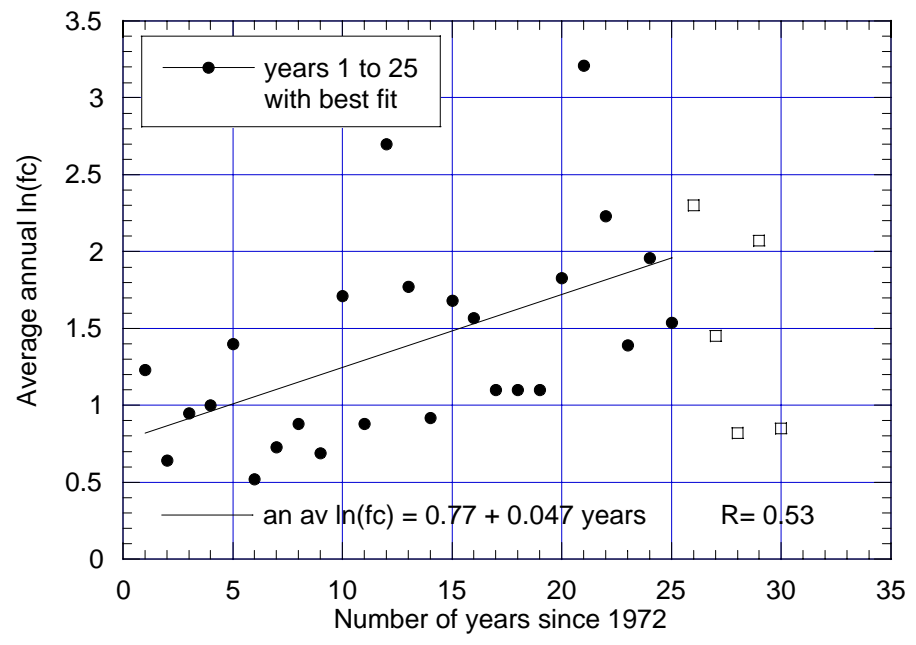
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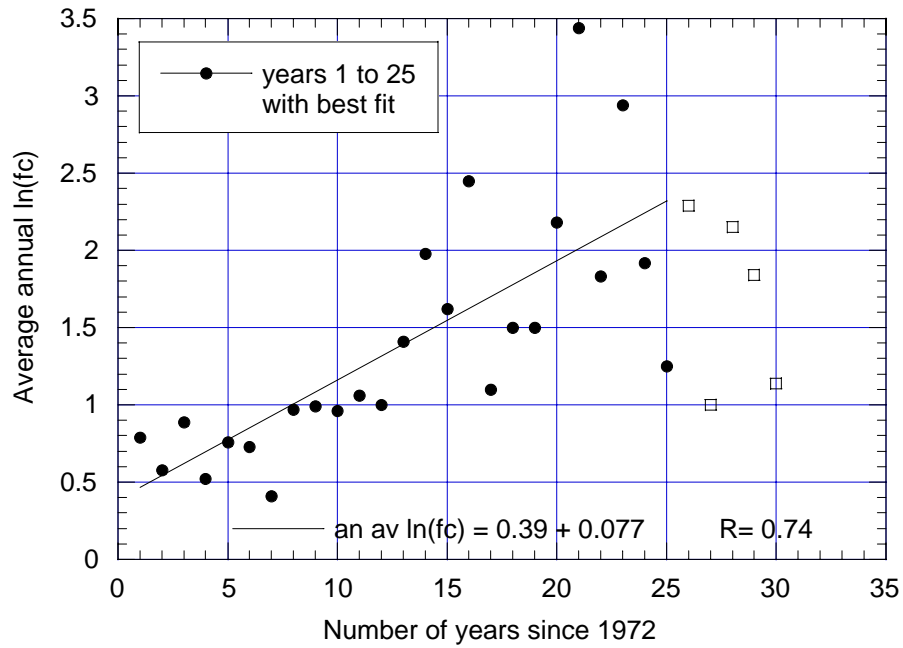
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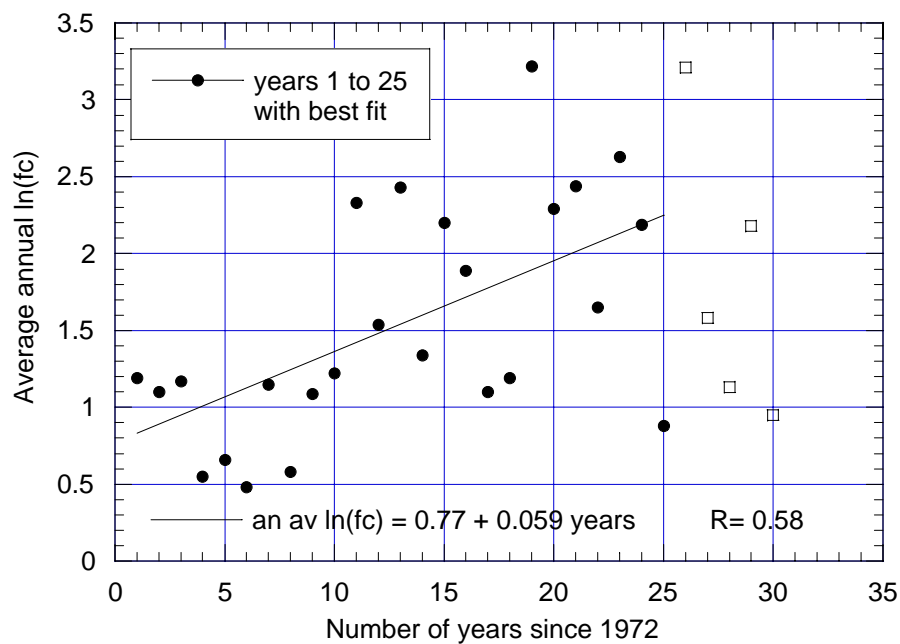
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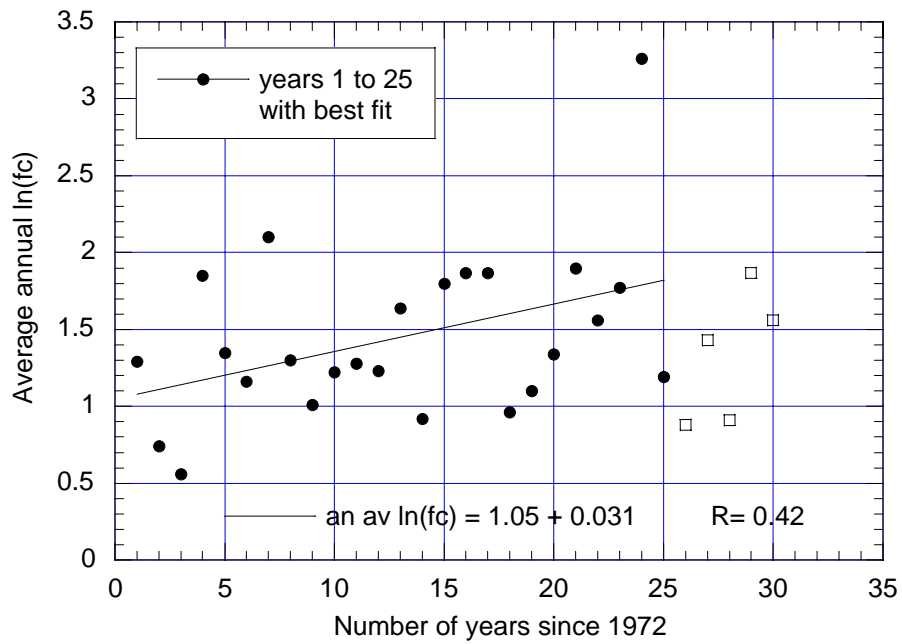
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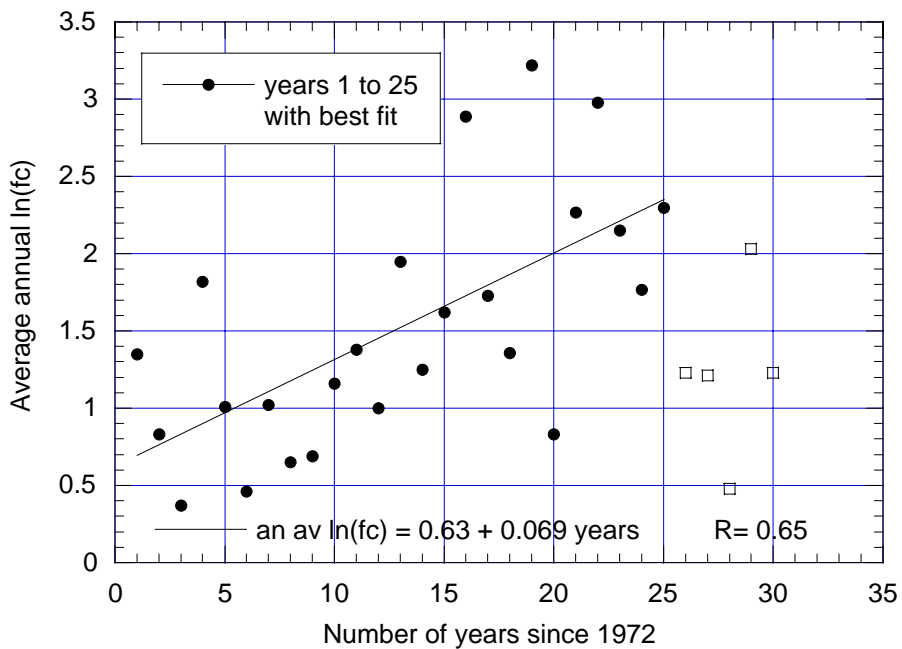
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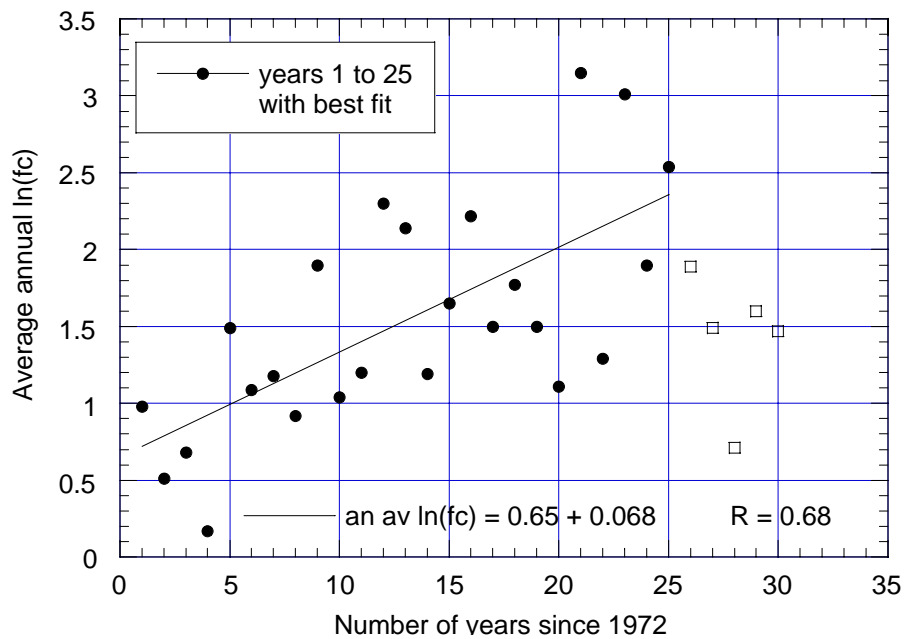
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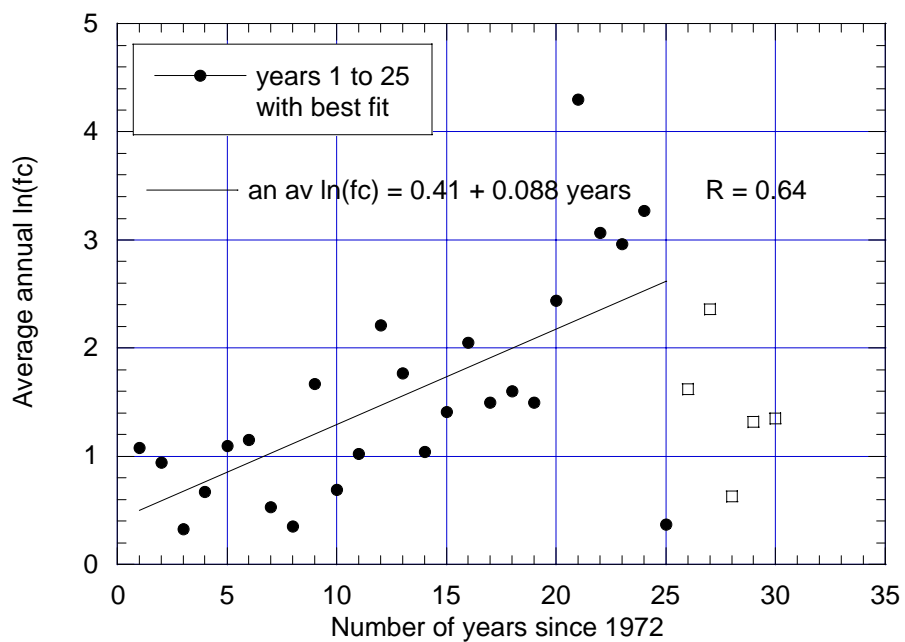
Station 29



Station 30



Station 31



Station 32