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LAMPIRAN

Lampiran 1. Data Waktu, Titik Koordinat, dan Tingkat Keparahan (Observasi) Kejadian *Coral Bleaching* di Fiji

No. Kejadian	Waktu Kejadian	Titik Koordinat		Tingkat Keparahan (*Y*)
		Latitude	*Longtitude*	
1	15/01/2008	-18.16	178.4	1
2	15/01/2008	-18.16	178.4	1
3	15/01/2008	-17.56	177.31	1
4	15/10/2007	-17.56	177.31	1
5	15/02/2001	-18.159	178.399	1
6	15/04/2000	-18.159	178.399	3
7	15/04/2000	-18.159	178.399	3
8	15/02/2002	-17.3	178.5	1
9	15/04/2001	-17.3	178.5	1
10	15/06/2000	-17.3	178.5	3
11	15/02/2002	-17.3	178.6	1
12	15/04/2002	-17.3	178.6	1
13	15/04/2004	-17.3	178.6	1
14	15/04/2006	-17.3	178.6	1
15	15/06/2000	-17.3	178.6	3
16	15/03/1999	-17.8992	178.7581	1
17	15/04/1998	-17.8992	178.7581	1
18	15/04/2000	-17.8992	178.7581	3
19	15/04/2000	-17.696	177.312	2
20	15/04/2000	-17.696	177.312	2
21	15/04/2000	-17.575	177.346	3
22	15/06/2000	-17.575	177.346	2
23	15/04/2000	-17.565	177.299	3
24	15/06/2000	-17.565	177.299	2
25	15/06/2000	-16.834	179.299	3
26	15/06/2000	-16.834	179.299	3
27	15/06/2000	-16.81	179.239	3
28	15/06/2000	-16.81	179.239	3

Lampiran 2. Data Prediktor

Distance to Shore, Exposure, Turbidity, Cyclone Frequency

No. Kejadian	*Distance to Shore*	*Exposure*	*Turbidity*	*Cyclone Frequency*
1	2508.97	2.0	0.0729	55.636439
2	2508.97	2.0	0.0729	55.636439
3	7090.3	0.0	0.0686	19.859834
4	7090.3	0.0	0.0686	19.859834
5	2585.0	2.0	0.0729	55.636439
6	2585.0	2.0	0.0729	55.636439
7	2585.0	2.0	0.0729	55.636439
8	3866.56	0.0	0.050937682	38.733416
9	3866.56	0.0	0.050937682	38.733416
10	3866.56	0.0	0.050937682	38.733416
11	14223.22	0.0	0.055	38.733416
12	14223.22	0.0	0.055	38.733416
13	14223.22	0.0	0.055	38.733416
14	14223.22	0.0	0.055	38.733416
15	14223.22	0.0	0.055	38.733416
16	12246.84	0.0	0.117948346	35.797637
17	12246.84	0.0	0.117948346	35.797637
18	12246.84	0.0	0.117948346	35.797637
19	257.16	0.0	0.056132011	46.912933
20	257.16	0.0	0.056132011	46.912933
21	3870.91	0.0	0.0789	19.859834
22	3870.91	0.0	0.0789	19.859834
23	7365.52	0.0	0.0686	19.859834
24	7365.52	0.0	0.0686	19.859834
25	1571.9	2.0	0.0388	40.002971
26	1571.9	2.0	0.0388	40.002971
27	4972.01	2.0	0.055	41.400476
28	4972.01	2.0	0.055	41.400476

Depth, Climatological SST, *Temperature Mean, Windspeed*

No. Kejadian	*Depth*	*Climatological* SST	*Temperature Mean*	*Windspeed*
1	5	262.15	299.752	7.0
2	10	262.15	299.752	7.0
3	10	302.72	301.0	7.0
4	10	301.11	301.0	2.0
5	0	262.15	299.752	5.0
6	6.75	262.15	299.752	5.0
7	0	262.15	299.752	5.0
8	10	301.61	299.96	4.0
9	4	300.41	299.96	3.0
10	0	298.53	299.96	4.0
11	7.5	301.61	299.96	4.0
12	6	300.44	299.96	7.0
13	6	300.22	299.96	5.0
14	6	300.22	299.96	3.0
15	0	298.53	299.96	4.0
16	0	301.22	299.89	3.0
17	0	300.22	299.89	5.0
18	0	300.22	299.89	5.0
19	0	301.34	300.91	5.0
20	3.25	301.34	300.91	5.0
21	0	301.44	301.07	4.0
22	0	299.31	301.07	4.0
23	0	301.42	301.0	5.0
24	0	299.35	301.0	4.0
25	0	298.89	300.19	4.0
26	0	298.89	300.19	4.0
27	0	298.89	300.23	4.0
28	0	298.89	300.23	4.0

SSTA, SSTA *Frequency*, SSTA DHW

No. Kejadian	SSTA	SSTA *Frequency*	SSTA DHW
1	0.556	14.0	5.232
2	0.556	14.0	5.232
3	0.21	18.0	7.88
4	0.52	13.0	12.32
5	-0.224	14.4	0.972
6	1.072	12.8	7.842
7	1.072	12.8	7.842
8	1.34	2.0	1.68
9	-0.16	15.0	0.0
10	0.76	11.0	9.23
11	0.6	3.0	1.54
12	0.98	5.0	3.79
13	0.09	2.0	0.0
14	1.26	8.0	2.17
15	0.58	13.0	10.15
16	0.86	8.0	1.63
17	0.45	0.0	0.0
18	1.4	7.0	4.63
19	0.02	7.0	0.0
20	0.02	7.0	0.0
21	0.92	3.0	1.01
22	0.5	3.0	2.02
23	0.64	1.0	0.0
24	0.2	1.0	1.02
25	1.12	8.0	2.24
26	1.12	8.0	2.24
27	0.97	5.0	4.36
28	0.97	5.0	4.36

TSA, TSA *Frequency*, TSA DHW

No. Kejadian	TSA	TSA *Frequency*	TSA DHW
1	-0.00400000000000001	0.6	0.0
2	-0.00400000000000001	0.6	0.0
3	-0.14	0.0	0.0
4	-2.1	0.0	0.0
5	-0.248	2.6	0.22
6	0.438	4.0	5.104
7	0.438	4.0	5.104
8	1.33	1.0	1.63
9	-0.71	0.0	0.0
10	-1.74	0.0	0.0
11	0.59	1.0	1.48
12	0.49	1.0	1.48
13	-0.51	0.0	0.0
14	0.73	0.0	0.0
15	-1.89	1.0	0.0
16	0.73	0.0	0.0
17	-0.41	0.0	0.0
18	0.59	2.0	2.42
19	-0.55	0.0	0.0
20	-0.55	0.0	0.0
21	0.33	0.0	0.0
22	-2.27	0.0	0.0
23	0.08	0.0	0.0
24	-2.46	0.0	0.0
25	-1.33	1.0	0.0
26	-1.33	1.0	0.0
27	-1.51	0.0	0.0
28	-1.51	0.0	0.0

Lampiran 3. Perhitungan prediksi Tingkat Keparahan ($\hat{Y}$) dengan menggunakan model prediksi yaitu **Persamaan 4.1**

No. Kejadian	*DS*	*D*	*SSTA*	*SSTA DHW*	$\hat{Y}$
1	2508.97	5	0.556	5.232	2
2	2508.97	10	0.556	5.232	1
3	7090.3	10	0.21	7.88	1
4	7090.3	10	0.52	12.32	1
5	2585.0	0	-0.224	0.972	2
6	2585.0	6.75	1.072	7.842	2
7	2585.0	0	1.072	7.842	3
8	3866.56	10	1.34	1.68	1
9	3866.56	4	-0.16	0.0	1
10	3866.56	0	0.76	9.23	3
11	14223.22	7.5	0.6	1.54	1
12	14223.22	6	0.98	3.79	1
13	14223.22	6	0.09	0.0	1
14	14223.22	6	1.26	2.17	1
15	14223.22	0	0.58	10.15	2
16	12246.84	0	0.86	1.63	2
17	12246.84	0	0.45	0.0	2
18	12246.84	0	1.4	4.63	3
19	257.16	0	0.02	0.0	2
20	257.16	3.25	0.02	0.0	1
21	3870.91	0	0.92	1.01	3
22	3870.91	0	0.5	2.02	2
23	7365.52	0	0.64	0.0	2
24	7365.52	0	0.2	1.02	2
25	1571.9	0	1.12	2.24	3
26	1571.9	0	1.12	2.24	3
27	4972.01	0	0.97	4.36	3
28	4972.01	0	0.97	4.36	3

Lampiran 4. Perbandingan Data Observasi dan Data Prediksi Tingkat Keparahan *Coral Bleaching*

No. Kejadian	Observasi (Y)	Prediksi ($\hat{Y}$)
1	1	2
2	1	1
3	1	1
4	1	1
5	1	2
6	3	2
7	3	3
8	1	1
9	1	1
10	3	3
11	1	1
12	1	1
13	1	1
14	1	1
15	3	2
16	1	2
17	1	2
18	3	3
19	2	2
20	2	1
21	3	3
22	2	2
23	3	2
24	2	2
25	3	3
26	3	3
27	3	3
28	3	3

Lampiran 5. Gambar Proses Pengolahan Data Pada *Software*

```
%Menghitung persentase kebenaran model stepwise kejadian bleaching untuk lokasi di Fiji
%Halmar Halide, Laboratorium Hidrometeorologi, Departemen Geofisika,
%FMIPA Unhas, 2023.
%Data skripsi Riman Tonapa

clear
clf
load fiji14.txt
factors=fiji14(:,1:14);
bleach=fiji14(:,15);
mdl = stepwiselm(factors,bleach,'PEnter',0.05);

tetapan=1.9886;x_1=-5.3687e-05;x_5=-0.15982;x_9=0.75016;x_11=0.078645;

x1=factors(:,1);xsatu=x1-mean(x1)./std(x1);
x5=factors(:,5);xlima=x5-mean(x5)./std(x5);
x9=factors(:,9);xsembilan=x9-mean(x9)./std(x9);
x11=factors(:,11);xsatusatu=x11-mean(x11)./std(x11);

bleach_obs=bleach;
bleach_mod=round(tetapan+x_1.*x1+x_5.*x5+x_9.*x9+x_11.*x11);
[m,n]=size(bleach_mod);

```

```
%utk menyesuaikan nilai prediksi bleaching yg >3 atau <1
 for i=1:m
     if bleach_mod(i)>=3
        bleach_mod(i)=3;
     else if bleach_mod(i)<=1
        bleach_mod(i)=1;
         else
             bleach_mod(i)=bleach_mod(i);
         end
     end
 end
%exitt
%contingency tabel or confusion matrix
C = confusionmat(bleach_obs,bleach_mod,'Order',[1 2 3]);

confusionmat=[9,4,0;1,3,0;0,3,8]
numCategories = size(confusionmat, 1);
totalCorrect = sum(diag(confusionmat));
totalIncorrect = sum(confusionmat(:)) - totalCorrect;
expectedCorrect = sum(sum(confusionmat, 2) .* sum(confusionmat, 1)) / sum(confusionmat(:));
HeidkeSS = (totalCorrect - expectedCorrect) / (sum(confusionmat(:)) - expectedCorrect);

diagonal=sum(diag(C));
PC=100.*(diagonal./m);
```

```
hasil_regression=[bleach_obs,bleach_mod];
pearmse1(bleach_mod,bleach_obs)

%standardized variabels
Y=bleach;X=[xsatu xlima xsembilan xsatusatu];
[B,BINT] = regress(Y,X);
%exitt
%standardized coeffs B, strength:
%A standardized beta coefficient compares the strength of the effect of each individual inde
%variable to the dependent variable. The higher the absolute value of the beta coefficient,

```

Lampiran 6. Gambar Hasil Pengolahan Data Pada *Software*

1. Nilai Signifikan, Konstanta (a), dan Koefisien (b)

Command Window

Estimated Coefficients:

	Estimate	SE	tStat	pValue
(Intercept)	(a) 1.9886	0.23577	8.4346	1.7103e-08
x1	-5.3687e-05	2.1917e-05	-2.4495	Sig. 0.022338
x5	(b) -0.15982	0.028466	-5.6144	1.0299e-05
x9	0.75016	0.24079	3.1155	0.0048658
x11	0.078645	0.032393	2.4279	0.023421

2. Nilai Koefisien Standar (β)

B

4x1 double

	1	2	3	4	5	6
1	(β) 0.0001					
2	-0.1636					
3	-1.1319					
4	0.2208					
5						
6						
7						
8						
9						

3. Nilai Korelasi *Pearson* (r) dan RMSE

ans

1x4 double

	1	2
1	0.8167	0.5345
2	(r)	RMSE
3		
4		