

Corrigendum

Notice

Corrections to:

International Journal of Wildland Fire, Vol. 7, No. 2 (June 1997), pp. 69–218.

Special Issue: 'Project Aquarius. Stress, strain and productivity in wildland firefighters'.

and its reprint under the title:

Budd GM, Brotherhood JR, Hendrie AL, Cheney NP, Dawson MP (1997)

'Stress, strain, and productivity in men suppressing wildland fires with hand tools.'

(International Association of Wildland Fire: Fairfield WA, USA)

Each of these volumes, which have identical text and pagination, contains eight small but serious printing errors that require correction. Five of the errors can be corrected by hand; the other three require corrected tables to be pasted over the erroneous tables.

Page numbers given below refer to the original publication.

These corrections are also posted on the web site of the CSIRO Division of Forestry and Forest Products at www.ffp.csiro.au/nfm/fbm/publications/books/stress.html

GM Budd
NP Cheney

for the authors

1. Errors to correct by hand.

Page	Place	Error	How to correct it
81	Figure 4, 'Firefighters' heart rate' panel	Numerals out of sequence	Replace 140 with 160 Replace 180 with 200
113	Table 5, 'Non-raking activities', row 4	Extraneous phrase	Erase the extraneous phrase
123	Table 2, row 'R+C (w)', column 'Set 1'	Minus sign omitted before '99'	Insert minus sign before '99'
173	Table 1, row 'Raking activities energy expenditure, Sc', column 'WS'	'37.2**' is in the wrong column	Move '37.2**' to right, to align with 'R ² '
174	Table 2, row 'Sweat, p, b', column 'Ta'	'16.89***' is displaced to the right of 'Ta' column	Move '16.89***' to left, to align with 'Ta'

2. Erroneous tables to replace. Paste replacement table over erroneous table.

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Table 1. Headfire intensity and rate of spread in the 15 fire rakes.[#]

FR	Date	Start time (hr)	Duration (min)	Fireline (metres)	FFDI Index	Class	Fuel load (t ha ⁻¹)	ROS (m hr ⁻¹)	Intensity (kW m ⁻¹)
1	25-1-83	1613	79	521	4	low	7.4	600-800	2220-2960
2	14-2-83	1603	66	345	4	low	-	-	-
3	23-2-83	1545	150	652	5	mod	7.1	200-280	710-990
4	28-2-83	1655	60	422	14	high	7.7	-	-
5	1-3-83	1433	60	270	17	high	8.2	390-500	1600-2050
6a	25-1-84	1433	67	378	6	mod	13.1	150-250	980-1640
6b	25-1-84	1643	40	267	6	mod	11.7	-	-
7	12-2-84	1313	140	591	12	high	11.0	-	-
8	15-2-84	1353	36	327	9	mod	10.3	-	-
9a	6-2-85	1300	33	291	2	low	10.6	-	-
9b	6-2-85	1425	22	246	2	low	10.6	-	-
10	11-2-85	1310	217	953	4	low	10.3	100-490	520-2520
11	12-2-85	1150	82	357	9	mod	10.2	120-220	610-1120
12a	13-2-85	1320	35	300	5	mod	11.2	60-200	340-1120
12b	13-2-85	1517	67	300	5	mod	9.4	100-290	470-1360
13	15-2-85	1220	66	450	13	high	11.5	50-100	290-580
14	20-2-85	1442	91	541	13	high	11.3	340-580	1920-3280
15	21-2-85	1455	40	185	18	high	10.9	160-300	870-1640

[#] FR, Fire rake. FFDI, Forest Fire Danger Index and Class. Mod, moderate. ROS, rate of spread of headfire (range). -, observations missed because the aircraft was unavailable or because the head fire had burnt through the experimental block before it was safe to start raking.

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Table 1. Shvartz test. Physiological and subjective responses. 'Best model' multiple regressions. Percentage of variation explained (Sc, R²), and partial regression coefficients (b).[#]

Dependent variables	Independent variables							
	p/w	Int	Pre	VO _{2max}	% Fat	FFM	Age	R ²
Energy expenditure (W)	w	Sc b	n.a. -38.69	-	28.0 9.673***	46.6 9.441***	-	88.2***
Energy expenditure (W kg ⁻¹ FFM)	w	Sc b	n.a. 9.049	-	66.8 0.140***	-	-	66.8***
RWL stepping (%)	w	Sc b	n.a. 105.0	60.2 -1.017***	23.2 0.734***	-	-	83.7***
Heat tolerance (Shvartz score)	w	Sc b	n.a. 28.34	11.5 1.037*	42.5 -2.475***	-	5.0 0.802	54.8**
Physiological responses								
Heart rate (beats min ⁻¹)	p	Sc b	n.a. 67.39	9.1 -0.511 ⁺	14.4 0.797*	-	11.7 0.682 ⁺	48.8**
	w	Sc b	n.i.m. 171.5	16.4 -1.115*	29.4 1.737**	-	-	46.0**
	w	Sc b	- 171.5	16.4 -1.115*	29.4 1.737**	-	-	46.0**
Rectal temp (°C)	p	Sc b	n.a. 38.20	11.1 -0.013 ⁺	26.2 0.024**	12.0 -0.012 ⁺	-	42.4*
	w	Sc b	n.i.m. 39.10	13.0 -0.017*	39.0 0.037**	7.3 -0.012	7.6 -0.016	56.8**
	w	Sc b	82.1 -1.745	- 1.062***	-	-	-	82.1***
Thigh temp (°C)	p	Sc b	n.a. 28.80	-	19.8 -0.069*	16.3 0.045*	12.7 0.053 ⁺	41.7*
	w	Sc b	n.i.m. 29.30	8.2 0.047	21.4 -0.095**	-	33.4 0.112**	50.6**
	w	Sc b	- 29.30	8.2 0.047	21.4 -0.095**	-	33.4 0.112**	50.6**
Subjective responses								
RPE	p	Sc b	n.a. 8.326	8.5 -0.026	23.2 0.052*	-	23.9 -0.051**	44.6*
	w	Sc b	n.i.m. 22.18	39.4 -0.188**	-	-	-	39.4**
	w	Sc b	- 22.18	39.4 -0.188**	-	-	-	39.4**
Thermal comfort	p	Sc b	n.a. 2.329	-	-	-	14.3 0.041 ⁺	14.3 ⁺
	w	Sc b	n.i.m. -	-	-	-	-	-
	w	Sc b	-	-	-	-	-	-
Sweatiness	p	Sc b	n.a. -	-	-	-	-	-
	w	Sc b	n.i.m. 3.906	10.7 -0.048	13.5 0.063 ⁺	-	-	24.4 ⁺
	w	Sc b	- 3.906	10.7 -0.048	13.5 0.063 ⁺	-	-	24.4 ⁺

[#] N=21. Sc, squared semi-partial correlation coefficient Type II. RWL stepping, relative work load stepping (energy expenditure/VO_{2max} stepping). RPE, rating of perceived exertion (see Figure 2 for rating scale). Thermal comfort scale: 1, much too cool; 4, neither warm nor cool; 7, much too warm. Sweatiness, perceived sweatiness: 0, dry; 4, dripping wet. Int, intercept; p (and pre), pre-test; w, work; VO_{2max}, stepping VO_{2max} (ml min⁻¹ kg⁻¹ FFM); % Fat, body fat content (%); FFM, fat-free mass (kg); Age, age (yr). n.a., not applicable; n.i.m., not included in full model (see PA10); -, included in full model but did not get into the best model. Statistical significance: no superscript, $P > 0.10$; ⁺, $P < 0.10$; *, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$.

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Table 3. Line rakes. Work behaviour. 'Best model' multiple regressions. Percentage of variation explained (Sc, R²), and partial regression coefficients (b).[#]

Dependent variables		Independent variables					
		Int	VO _{2max}	% Fat	FFM	Age	R ²
Raking							
Energy expenditure (W)	Sc		-	-	27.8	31.6	69.7***
	b	-18.03			7.181***	9.521***	
Energy expenditure (W kg ⁻¹ FFM)	Sc		-	-	10.1	53.3	57.8***
	b	10.24			-0.056*	0.159***	
RWL (%)	Sc		58.7	-	5.3	18.7	85.4***
	b	121.7	-1.132***		-0.334*	0.782***	
Productivity (m ² min ⁻¹)	Sc		35.9	8.5	19.4	2.9	66.5***
	b	-0.357	0.022***	0.020 ⁺	0.015**	-0.008	
Efficiency (m ² l ⁻¹ O ₂)	Sc		26.2	4.6	-	24.4	57.6**
	b	0.489	0.014**	0.011		-0.017**	
Non-raking							
Energy expenditure (W)	Sc		4.5	-	59.9	2.0	72.9***
	b	-48.79	-2.914		8.790***	1.994	
Energy expenditure (W kg ⁻¹ FFM)	Sc		9.2	-	16.2	5.1	34.0 ⁺
	b	4.927	-0.039		0.042 ⁺	0.030	
RWL (%)	Sc		53.6	-	8.6	2.2	67.2***
	b	55.97	-0.773***		0.255*	0.161	
All activities							
Energy expenditure (W)	Sc		-	-	42.2	20.2	72.6***
	b	-19.85			6.508***	5.599**	
Energy expenditure (W kg ⁻¹ FFM)	Sc		-	-	8.3	45.6	49.2**
	b	8.102			-0.033 ⁺	0.096***	
RWL (%)	Sc		60.2	-	3.9	16.9	78.3***
	b	95.03	-0.902***		-0.197 ⁺	0.504**	

[#] N=21. VO_{2max} and relative work load (RWL) are the matched raking, stepping, or weighted values (see 'Methods'). Details as in Tables 1 and 2.