Cal/Ecotox
Exposure Factors for Little Pocket Mouse (Perognathus longimembris)*

Endpoint Type	Endpoint Value	Error	Range	Units	Sex	Life Stage	Location	Note	Reference
Age at Fledging, Metamorphosis, Weaning	18			d	NR	Juvenile	Lab	a	1
Body Weight - Mean			8.1 - 8.8	g	B	Adult	CA	b	2
Body Weight - Mean	7.4	1.1 SD		g	B	Adult	NV	c	3
Body Weight - Mean	7.3	1.1 SD		g	F	Adult	Inyo; CA	d	4
Body Weight - Mean	7.2	0.7 SD		g	M	Adult	Inyo; CA	e	4
Body Weight - Mean	4			g	B	Juvenile	Inyo; CA	f	4
Body Weight - Mean	0.5			g	NR	Neonate	Inyo; CA	g	4
Body Weight - Mean	1.3			g	NR	Neonate	Lab	h	1
Body Weight - Mean			7.3-7.8	g	B	NR	Inyo; CA	i	5
Body Weight - Mean	7.1	0.11 SE	6.3-8.0	g	B	NR	Inyo; CA	j	5
Body Weight - Mean			9.33 - 9.45	g	NR	NR	Lab	k	6
Clutch or Litter Size	4.75	0.77 SD	4 - 6	pups/litter	F	Adult	Inyo; CA	l	4
Clutch or Litter Size	5.78	0.22		embryos/litter	F	Adult	UT	m	7
Dietary Composition	see citation			%	B	NR	Orange; CA	n	8
Dietary Composition	Grasses: Oryzopsis hymenoides (27.7%); Hilaria rigida (6.6%); Bromus rubens (8.5%); Annual forbs: Plantago insularis (12.3%); Phacelia spp. (4.5%); Perrenial shrubs: Ephedra funera (9.8%); Sphaeralcea ambigua (11.3%); Dalea fremontii (7.3%); Vegetative plant parts: Phacelia spp. (3.5%); Misc. (4.5%)				NR	NR	NV	o	9
Duration of Incubation or Gestation	3			wk	F	Adult	Inyo; CA	p	4
Food Ingestion Rate			76-197	mg/g bw/d	B	NR	Inyo; CA	q	5
Food Ingestion Rate			20-316	mg/g bw/d	NR	NR	Lab	r	5
Food Ingestion Rate	S = -9.37T + 408				NR	NR	Lab	s	5
Foraging Distance	< 50			m	NR	NR	Inyo; CA	t	5
Growth Rate	see citation			g	NR	Juvenile	Lab	u	1
Home Range	19.0			m	B	NR	NV	v	10
Home Range	0.33			ha	NR	NR	NV	w	11
Home Range	review				NR	NR		x	12
Longevity			4 - 7	yrs	B	Adult	Lab	y	13
Longevity	8.3			yrs	B	Adult	Lab	z	14
Longevity	> 8			yrs	NR	Adult	Lab	aa	15
Metabolic Rate	OC = 12.68 - 0.286T			ml O2/g/hr	NR	NR	Lab	ab	16
Population Density			0.73 - 1.74	#/ha	NR	NR	CA	ac	2
Population Density	review				NR	NR		ad	12
Survival/ Mortality			36-82%		NR	NR	Inyo; CA	ae	5
Time of Mating/ Laying	Apr. - May				B	Adult	Inyo; CA	af	4
Time of Molt	July and August				NR	NR	Inyo; CA	ag	5
Time of Torpor or Hibernation	Sept. - Mar. or Apr.				NR	Adult	Inyo; CA	ah	4

Notes

a N=26

b	range of annual weight means for 2 yrs; N=31 - 65/yr; Indian Cove, Joshua Tree National Monument; see citation for figure of seasonal changes in weight
c	N=8; Great Basin Desert, near Reno
d	N=67; Owens Valley, Big Pine (lat., 37^o11'N); see citation for figure of seasonal changes in weight
e	N=66; Owens Valley, Big Pine (lat., 37^o11'N); see citation for figure of seasonal changes in weight
f	N=NR; Age=4 wk; Owens Valley, Big Pine (lat., 37^o11'N)
g	N=NR; Age=at birth; Owens Valley, Big Pine (lat., 37^o11'N)
h	weight at birth; N=26
i	range of mean body weights measured multiple times in individuals; N=6 individuals; Owens Valley
j	N=22 individuals; spring, summer; Owens Valley; No significant differences were observed between males and females
k	range of means of initial weights for 3 experimental groups; N=9/group; captured at Joshua Tree, San Bernadino County, CA
l	N=16; Owens Valley, Big Pine (lat., 37^o11'N)
m	N=9; Apr. - Sept.; Floating Island, Tooele County (elev., 1300-1420 m)
n	monthly % volume of food items (detailed species-specific list) in feces; N=3 - 26/mo; Mar. - Oct.; Irvine Ranch
o	% volume in cheek pouches of major (>2%) food items; N=27; Mar. - June ; Las Vegas Valley, Clark County (elev., 2500 ft); see citation for detailed list of food items
p	N=NR; Owens Valley, Big Pine (lat., 37^o11'N)
q	seed consumption measured in field enclosures; N=6 individuals; Owens Valley; Animals in field enclosures consumed less than that required to maintain normothermy.
r	amount of seed consumed at 6.5 degrees C; N=10 individuals
s	seed consumption (S) in mg/g bw/d as a function of ambient temperature, in centigrade (T); N=8 individuals; Determinations were made in normothermic animals at 5, 15, and 25 degrees C.
t	maximum distance moved by individuals in one trap night; N=219; all months; Owens Valley (1,220 m)
u	figure of body weight at various ages (0 - 60 d) with calculated instantaneous growth rates; N=26
v	home range expressed as "sigma" (radius within which the probability of an animal being present is 39%); N=4 sampling periods; yr-round; U.S. Atomic Energy Commission, Nevada Test Site; author notes 2xsigma = 86% probability and 3xsigma = 99% probability
w	annual composite home range estimated by principal component method (95% probability); N=394 recapture loci; yr-round; Warm Springs Valley, Washoe County; see citation for seasonal changes in home range; mean body weight = 8.0 g
x	N=NR
y	lifespan in captivity; N=2; captured in San Diego County
z	maximum lifespan in captivity; N=216
aa	lifespan in captivity; N=1; captured in Kern County, CA
ab	equation for average maintenance metabolism estimated as oxygen consumption (OC) at ambient temperatures (T; <30C).; N=27; body weight range = 8.0 - 8.5 g
ac	range in monthly density estimates over 2 yrs; N=NR; Indian Cove, Joshua Tree National Monument
ad	N=NR
ae	overwinter survival rates for sampled populations, measured for 3 consecutive years; N=11-27 individuals/yr; winter; Owens Valley (1,220 m)
af	N=NR; Owens Valley, Big Pine (lat., 37^o11'N)
ag	N=NR; July-August; Owens Valley; All three species of heteromyids studied molted during this period.
ah	N=NR; Owens Valley, Big Pine (lat., 37^o11'N)

References

1 Hayden, P. and J.J. Gambino. 1966. Growth and development of the little pocket mouse, Perognathus longimembris. Growth. 30:187-197.
2 Chew, Robert M. and Bernard B. Butterworth. 1964. Ecology of rodents in Indian Cove (Mojave Desert), Joshua Tree National Monument, California. J. Mammal. 45:203-225.
3 VanderWall, Stephen B., William S. Longland, Sanjay Pyare and Joseph A. Veech. 1998. Cheek pouch capacities and loading rates of heteromyid rodents. Oecologia. 113:21-28.
4 Kenagy, G. J. and George A. Bartholomew. 1985. Seasonal reproductive patterns in five coexisting California desert rodent species. Ecol. Monogr. 55(4):371-397.
5 Kenagy, G. J. 1973. Daily and seasonal patterns of activity and energetics in a heteromyid rodent commuinity. Ecology. 54(6):1201-1219.
6 Hulbert, A.J. and Richard E. MacMillen. 1988. The influence of ambient temperature, seed composition and body size on water balance and seed selection in coexisting heteromyid rodents. Oecologia. 75(4):521-526.
7 Cramer, Kenneth L. and Joseph A. Chapman. 1990. Reproduction of three species of pocket mice, (Perognathus) in the Bonneville Basin, Utah. Great Basin Nat. 50:361-365.
8 Meserve, Peter L. 1976. Food relationships of a rodent fauna in a California coastal sage scrub community. J. Mammal. 57:300-319.
9 Bradley, W. Glen and Roger A. Mauer. 1973. Rodents of a creosote bush community in southern Nevada. Southwest. Nat. 17:333-344.
10 Maza, B.G., N.R. French and A.P. Aschwanden. 1973. Home range dynamics in a population of heteromyid rodents. J. Mammal. 54:405-425.
11 O'Farrell, Michael J. 1978. Home range dynamics of rodents in a sagebrush community. J. Mammal. 59:657-668.

12 United States Fish and Wildlife Service. 1997. Draft recovery plan for the pacific pocket mouse (Perognathus longimembris pacificus). Carlsbad, CA: U.S. Fish and Wildlife Service, Carlsbad Field Office. 93 p.
13 Bailey, Vernon. 1939. The solitary lives of two little pocket mice. J. Mammal. 20:325-328.
14 Hayden, P. and R.G. Lindberg. 1976. Survival of laboratory-reared pocket mice, Perognathus longimembris. J. Mammal. 57:266-272.
15 Edmonds, Vaughan W. and Daniel S. Fertig. 1972. Longevity of the pocket mouse, Pergonathus longimembris. Southwest. Nat. 17:300-301.
16 Chew, Robert M., Robert G. Lindberg and Page Hayden. 1967. Temperature regulation in the little pocket mouse, Perognathus longimembris. Comp. Biochem. Physiol. 21:487-505.

*Cal/EPA, OEHHA and the University of California Regents are not responsible for damages of any kind resulting from the use of or reliance on information in this report. Users are encouraged to consult the original data. Updated: February 1999.