Cal/Ecotox
Exposure Factors for Mallard Duck (Anas platyrhynchos)*

Endpoint Type	Endpoint Value	Error	Range	Units	Sex	Life Stage	Location	Note	Reference
Body Fat (total or %)	72.4	44.2 SD		g lipid	F	Adult	ND	a	1
Body Fat (total or %)	168	8 SE		g (lipid)	F	Both Adult and Juv.	MO	b	2
Body Fat (total or %)	219	13 SE		g (lipid)	F	Both Adult and Juv.	MO	c	2
Body Fat (total or %)	188	13 SE		g (lipid)	F	Both Adult and Juv.	MO	d	2
Body Fat (total or %)	111	8 SE		g (lipid)	F	Both Adult and Juv.	MO	e	2
Body Fat (total or %)	145	7 SE		g (lipid)	F	Both Adult and Juv.	MO	f	2
Body Fat (total or %)	134	7 SE		g (lipid)	F	Both Adult and Juv.	MO	g	2
Body Fat (total or %)	110	11 SE		g (lipid)	F	Both Adult and Juv.	MO	h	2
Body Fat (total or %)	141	13 SE		g (lipid)	F	Both Adult and Juv.	MO	i	2
Body Fat (total or %)	65	14 SE		g (lipid)	F	Both Adult and Juv.	MO	j	2
Body Fat (total or %)	104	10 SE		g (lipid)	F	Both Adult and Juv.	MO	k	2
Body Fat (total or %)	102	12 SE		g (lipid)	F	Both Adult and Juv.	MO	l	2
Body Fat (total or %)	55.0	39.7 SD		g lipid	F	Yearling	ND	m	1
Body Weight - Mean	1,121.2	121.5 SD		g	F	Adult	ND	n	1
Body Weight - Mean	1020			g	F	Adult	ND	o	3
Body Weight - Mean	973			g	F	Adult	ND	p	3
Body Weight - Mean	1,078	11 SE		g	F	Adult	IL	q	4
Body Weight - Mean	1,240	8 SE		g	F; M	Adult	IL	r	4
Body Weight - Mean	1206			g	M	Adult	ND	s	3
Body Weight - Mean	1,079	4 (SE)	1,040-1,139	g	F	Both Adult and Juv.	MS	t	5
Body Weight - Mean	1,118	21 SE		g	F	Both Adult and Juv.	MO	u	2
Body Weight - Mean	1,068	22 SE		g	F	Both Adult and Juv.	MO	v	2
Body Weight - Mean	1,083	37 SE		g	F	Both Adult and Juv.	MO	w	2
Body Weight - Mean	983	20 SE		g	F	Both Adult and Juv.	MO	x	2
Body Weight - Mean	1,048	12 SE		g	F	Both Adult and Juv.	MO	y	2
Body Weight - Mean	1,085	18 SE		g	F	Both Adult and Juv.	MO	z	2
Body Weight - Mean	1,137	30 SE		g	F	Both Adult and Juv.	MO	aa	2
Body Weight - Mean	1,193	15 SE		g	F	Both Adult and Juv.	MO	ab	2
Body Weight - Mean	1,280	13 SE		g	F	Both Adult and Juv.	MO	ac	2
Body Weight - Mean	1,239	3 (SE)	1181-1314	g	M	Both Adult and Juv.	MS	ad	5
Body Weight - Mean	49.3	3.5 SD		g	NR	Embryo	ND	ae	3
Body Weight - Mean	32.4	2.4 SD		g	B	Hatchling	ND	af	3
Body Weight - Mean	936.1			g	B	Juvenile	Lab	ag	6
Body Weight - Mean	966	37 SE		g	F	Juvenile	IL	ah	4
Body Weight - Mean	1,163	12 SE		g	M	Juvenile	IL	ai	4
Body Weight - Mean	379	7 SE		g	NR	Juvenile	Lab	aj	7
Body Weight - Mean	1,070.2	121.3 SD		g	F	Yearling	ND	ak	1
Clutch or Litter Size	8.96	1.38 SE		eggs		Adult	ND	al	8
Clutch or Litter Size	8.6		8.2-8.8	eggs	F	Adult	SD	am	9
Clutch or Litter Size	10.3	1.1 SD		eggs	F	Adult	ND	an	1
Clutch or Litter Size	8.49	1.23 SE		eggs	F	Adult	ND	ao	8
Clutch or Litter Size	8.9			eggs	F	Adult	Modoc; Siskiyou; CA	ap	10
Clutch or Litter Size	10.4	0.2 (SE)		eggs	F	Adult	Lab	aq	11
Clutch or Litter Size	9.3	1.3 (SD)		eggs	F	Adult	NY	ar	12

Endpoint Type	Endpoint Value	Error	Range	Units	Sex	Life Stage	Location	Note	Reference
Clutch or Litter Size	8.37		7-10	eggs	F	Adult	Yolo; CA	as	13
Clutch or Litter Size	8.2			eggs	NR	NR	CA	at	14
Clutch or Litter Size	8.3			eggs	NR	NR	CA	au	14
Clutch or Litter Size	8.5			eggs	NR	NR	CA	av	14
Clutch or Litter Size	8.9			eggs	NR	NR	CA	aw	14
Clutch or Litter Size	9.3	1.7 SD		eggs	F	Yearling	ND	ax	1
Dietary Composition	Review						MO	ay	15
Dietary Composition	animal (3.0%), plant (97.0%)				B	Both Adult and Juv.	MS	az	5
Dietary Composition	plant (82.9-98.4%), and invertebrates (1.6-17.1%)				F	Both Adult and Juv.	MO	ba	16
Dietary Composition	total plant seeds (19.3%), total grain (5.7%), acorns (64.5%), total vegetation (0.9%), tubers/rhizomes (5.1%), invertebrates (4.6%)				M	Both Adult and Juv.	MO	bb	17
Dietary Composition	flora (25.3%), fauna (74.7%)				B	Juvenile	UT	bc	18
Dietary Composition	flora (50.6%), fauna (49.4%)				B	Juvenile	UT	bd	18
Dietary Composition	flora (89.4%), fauna (10.6%)				B	Juvenile	UT	be	18
Dietary Composition	flora (71%), fauna (29%)				B	Juvenile	UT	bf	18
Dietary Composition	flora (99.9%), fauna (0.08%)				B	Juvenile	UT	bg	18
Dietary Composition	flora (99.1%), fauna (0.92%)				B	Juvenile	UT	bh	18
Dietary Composition	flora (2.6%), fauna (97.4%)				B	Juvenile	UT	bi	18
Dietary Composition	flora (10.5%), fauna (89.5%)				B	Juvenile	UT	bj	18
Dietary Composition	Sago pondweed (Potamogeton pectinatus); Leafy pondweed (P. foliosus); small pondweed (P. pusillus); smartweed (Polygonum amphibium); widgeon grass (Ruppia maritima); redhead grass (Potamogeton perfoliatus); muskgrass (Chara spp.); duckweeds (Lemna minor and L. trisulca); horned pondweed (Zannichellia palustris); duck potato (Sagittaria arifolia); water spikerush (Eleocharis acicularis)				B	NR	MT	bk	19
Dietary Composition	gastropoda (0.001), crustacea (0.007), insecta (0.003), and plant (0.980)				B	NR	CANADA	bl	20
Dietary Composition	Total animal, 71.9: Gastropoda, 16.4; Insecta, 27.1; Crustacea, 12.9, Oligochaeta, 11.8. Total plant, 28.1; seeds, 24.8; vegetation 3.3; roots and tubers, 2.8.			% (by volume)	F	NR	ND	bm	21
Dietary Composition	Total animal, 37.0: Gastropoda, 4.5; Insecta, 22.6; Crustacea, 7.5. Total plant, 63.0: Seeds, 58.5; vegetation, 4.5; roots and tubers, 3.9.			% (by volume)	F	NR	ND	bn	21
Dietary Composition	Total animal, 37.6: Gastropoda, 6.3; Insecta, 16.8; Crustacea, 11.3. Total plant, 62.4: Seeds, 56.4; vegetation, 6.0; roots and tubers, 4.1.			% (by volume)	M	NR	ND	bo	21

Endpoint Type	Endpoint Value	Error	Range	Units	Sex	Life Stage	Location	Note	Reference
Dietary Composition	corn (51.7%), milo (2.6%), other plant (16.5%), mollusca (snails, clams; 2.9%), insecta (0.3%)				NR	NR	NE	bp	22
Dietary Composition	Zizania aquatica, 35.5%; Potmogeton strictifolius, 22.8%; Sparganium chlorocarpum, 11.1%; Scirpus validus, 4.0%; Potamogeton natans, 3.4%; Potamogeton richardsonii, 2.3%; Naias flexilis, 2.0%; Ceratophyllum demensum, 1.5%; Potamogeton spectinatus, 1.5%; Carex spp., 1.4%; Potamogeton zosteriformis, 1.3%; Carex pseudo-cyperus, 1.0%; Scirpus acutus, 1.0%			% (by volume)	NR	NR	MN	bq	23
Dietary Composition	snails (7%); beetle (2.3%); duckweed (14.1%); pondweed (23.2%); water lily (7.0%); bulrush (9.3%); smartweed (25.5%); Ammiaceae (11.6%)			%	NR	NR	OH	br	24
Duration of Incubation or Gestation	28			d	F	Adult	NY	bs	12
Duration of Incubation or Gestation	24.5	4.1 2SD	20-31	d	F	Adult	ND	bt	25
Duration of Incubation or Gestation	28			d	B	Embryo	MT	bu	19
Fledging or Weaning Rate	1.78			fully feathered young/hen	NR	Juvenile	ND	bv	8
Fledging or Weaning Rate	1.18			fully feathered young/hen	NR	Juvenile	ND	bw	8
Fledging or Weaning Rate	1.45			fully feathered young/hen	NR	Juvenile	ND	bx	8
Fledging or Weaning Rate	1.51			fully feathered young/hen	NR	Juvenile	ND	by	8
Food Ingestion Rate	574.7-1182.8 g/wk				B	Adult	Lab	bz	26
Food Ingestion Rate	3.9			g protein/day	F	Adult	MO	ca	27
Food Ingestion Rate			115 - 130	g/duck/d	F	Adult	Lab	cb	28
Food Ingestion Rate	376.2	25.6 (SE)		g/wk	B	Juvenile	Lab	cc	6
Food Ingestion Rate	38.01			grams/duck /day	F	Juvenile	Lab	cd	29
Food Ingestion Rate	43.35			grams/duck /day	M	Juvenile	Lab	ce	29
Food Ingestion Rate	70			g/day/duck	M	Juvenile	Lab	cf	30
Foraging Distance	3.8	0.4 SE		km	NR	NR	NE	cg	22
Growth Rate	0.0692	0.0030 (SE)			B	Juvenile	ND	ch	3
Growth Rate	195			g/wk	F	Juvenile	Lab	ci	6
Growth Rate	1.81%/d				M	Juvenile	Lab	cj	31

Endpoint Type	Endpoint Value	Error	Range	Units	Sex	Life Stage	Location	Note	Reference
Growth Rate	222			g/wk	M	Juvenile	Lab	ck	6
Hatching Success	12.2%				F	Adult	CANADA	cl	32
Hatching Success	43.9%				F	Adult	CANADA	cm	32
Hatching Success	91.4%				F	Adult	Modoc; Siskiyou; CA	cn	10
Hatching Success	85.2%				F	Adult	Modoc; Siskiyou; CA	co	10
Hatching Success	67%				F	Adult	NY	cp	12
Hatching Success	52			%	F	Adult	Yolo; CA	cq	13
Home Range	110.9			ha	F	Adult	ND	cr	33
Home Range	467.8			ha	F	Adult	ND	cs	33
Home Range	540		40-1440	ha	F	Adult	MN	ct	34
Home Range	135			ha	F	Adult	MN	cu	35
Home Range	210			ha	F	Adult	MN	cv	35
Home Range	70			ha	F	Adult	MN	cw	35
Home Range	620		70-1140	ha	M	Adult	MN	cx	34
Home Range	240			ha	M	Adult	MN	cy	35
Home Range	0.62	0.21 SE	0.045 - 2.68	km2	NR	Nestling	CA	cz	36
Home Range	1.27	0.47 SE	0.04 - 6.23	km2	NR	Nestling	CA	da	36
Inhalation Rate	30.1	0.76 SE		breaths/min	M	Adult	Lab	db	37
Inhalation Rate	34.9	1.29 SE		breaths/min	M	Adult	Lab	dc	37
Longevity	23-05			yr-mo	NR	Adult	USA	dd	38
Metabolic Rate	80			kcal/kg/day	B	Adult	Lab	de	39
Metabolic Rate	increased to 110 kcal/kg/day				B	Adult	Lab	df	39
Metabolic Rate	191			kcal/d	B	Juvenile	Lab	dg	6
Metabolic Rate	y = 1.780 - 0.052x (r-squared = 0.882)				F	Juvenile	Lab	dh	40
Metabolic Rate	y = 1.970 - 0.054x (r-squared = 0.932)				M	Juvenile	Lab	di	40
Population Density	76.6		46.9 - 113.6	nests/km2	B	Adult	SD	dj	9
Population Density	4.72		3.1 - 8.7	breeding pairs/km2	B	Adult	ND	dk	8
Population Density	3.62		0.6 - 7.6	breeding pairs/km2	B	Adult	ND	dl	8
Population Density	396			pairs/18000 acres	B	Adult	Yolo; CA	dm	13
Population Density	6.71 (40)			pairs/square mile	B	Adult	ND	dn	41
Population Density	314,712				B	Both Adult and Juv.	CA	do	42
Population Density	30,438				B	Both Adult and Juv.	CA	dp	42
Population Density	4,667				B	Both Adult and Juv.	CA	dq	42
Population Density	15,221				B	Both Adult and Juv.	Solano; CA	dr	42
Population Density	389				B	Both Adult and Juv.	CA	ds	42
Population Density	0.72			ducks/acre	B	Both Adult and Juv.	Yolo; CA	dt	13
Population Density	0.5			birds/ha	F	NR	CA	du	43
Population Density	20.8	1.5 SE	13.0 - 28.6	breeding pairs/km2	NR	NR	CA	dv	14
Population Density	0.25			birds/ha	NR	NR	CA	dw	43
Population Density	0.5			birds/ha	NR	NR	CA	dx	43
Population Density	1.0			birds/ha	NR	NR	CA	dy	43

Endpoint Type	Endpoint Value	Error	Range	Units	Sex	Life Stage	Location	Note	Reference
Population Density	0.07			birds/ha	NR	NR	CA	dz	43
Survival/ Mortality	0.5447	0.0128 (SE)			F	Adult	CA	ea	44
Survival/ Mortality	0.5462	0.0561 (SE)			F	Adult	CA	eb	44
Survival/ Mortality	59	3.4 SE		%	F	Adult	CA	ec	45
Survival/ Mortality	56			%	F	Adult	CA	ed	46
Survival/ Mortality	0.603				F	Adult	CANADA	ee	47
Survival/ Mortality	0.961				F	Adult	CANADA	ef	47
Survival/ Mortality	0.574	0.053 SE			F	Adult	CANADA	eg	48
Survival/ Mortality	0.915	0.090 (SE)			F	Adult	CANADA	eh	48
Survival/ Mortality	0.586	0.081 (SE)			F	Adult	OR	ei	49
Survival/ Mortality	88%				F	Adult	NY	ej	12
Survival/ Mortality	0.5664	0.0263 (SE)			M	Adult	CA	ek	44
Survival/ Mortality	0.6279	0.009 (SE)			M	Adult	CA	el	44
Survival/ Mortality	61			percent	M	Adult	CA	em	46
Survival/ Mortality	0.998				M	Adult	CANADA	en	47
Survival/ Mortality	0.782				M	Adult	CANADA	eo	47
Survival/ Mortality	0.628	0.035 (SE)			M	Adult	OR	ep	49
Survival/ Mortality	0.713				F	Both Adult and Juv.	MN	eq	50
Survival/ Mortality	0.344		0.20 - 0.49 (95% C.I.)		NR	Chick	CA	er	51
Survival/ Mortality	0.410		0.27 - 0.54 (95% C.I.)		NR	Chick	CA	es	51
Survival/ Mortality	0.366		0.19 - 0.55 (95% C.I.)		NR	Chick	CA	et	51
Survival/ Mortality	0.366		0.21 - 0.52 (95% C.I.)		NR	Chick	CA	eu	51
Survival/ Mortality	0.181		0.05 - 0.31 (95% C.I.)		NR	Chick	CA	ev	51
Survival/ Mortality	0.5626	0.0445 (SE)			F	Juvenile	CA	ew	44
Survival/ Mortality	0.3948	0.0458 (SE)			F	Juvenile	CA	ex	44
Survival/ Mortality	52	7.8 SE		%	F	Juvenile	CA	ey	45
Survival/ Mortality	46			%	F	Juvenile	CA	ez	46
Survival/ Mortality	0.569	0.105 (SE)			F	Juvenile	OR	fa	49
Survival/ Mortality	0.3948	0.0458 (SE)			M	Juvenile	CA	fb	44
Survival/ Mortality	0.5390	0.0228 (SE)			M	Juvenile	CA	fc	44
Survival/ Mortality	47			%	M	Juvenile	CA	fd	46
Survival/ Mortality	0.377	0.046 (SE)			M	Juvenile	OR	fe	49
Survival/ Mortality	0.84	0.025 SE			NR	Juvenile	ND	ff	52
Survival/ Mortality	0.728	0.079 (SE)			F	Yearling	CANADA	fg	48
Territory Size	70		48-95	yd	M	Adult	Yolo; CA	fh	13
Time of Hatching or Parturition	June 14							fi	53
Time of Hatching or Parturition	May-July				F	Adult	Modoc; Siskiyou; CA	fj	10
Time of Hatching or Parturition	May 16-29				B	Hatchling	Yolo; CA	fk	13
Time of Mating/ Laying	April 4 - July (median = May)				F	Adult	ND	fl	1
Time of Migration or Dispersal	May 5 - May 14				F		ND	fm	8
Time of Migration or Dispersal	March 15 - May 10				B	Adult	USA	fn	54
Time of Migration or Dispersal	April 20 - May 14				F	Adult	ND	fo	8
Time of Migration or Dispersal	May 22 to July 10				F	Adult	Solano; CA	fp	55
Time of Molt	July 30-August 10				F	Adult	Lab	fq	56
Time of Molt	July 21-27				M	Adult	Lab	fr	56
Time of Molt	August 8 (begin) - September 2 (end)				NR	NR	MN	fs	50

Endpoint Type	Endpoint Value	Error	Range	Units	Sex	Life Stage	Location	Note	Reference
Time of Nesting	April 26 - June 6						ND	ft	8
Time of Nesting	April-September				F	Adult	Modoc; Siskiyou; CA	fu	10
Time of Nesting	April-June				F	Adult	Lab	fv	11
Time of Nesting	April-June				F	Adult	Yolo; CA	fw	13
Time of Nesting	April 15 (begin) - May 20 (end)				NR	NR	MN	fx	50

Notes

a	N=NR; prairie pothole region of North Dakota
b	N=32; Condition=initiation prebasic molt; Mingo Basin
c	N=6; Condition=basic plumage, prespring migration departure; Mingo Basin
d	N=23; Condition=late prebasic molt; Mingo Basin
e	N=9; Condition=alternate plumage - early migrants, unpaired; fall; Mingo Basin
f	N=19; Condition=alternate plumage, paired; midwinter; Mingo Basin
g	N=12; Condition=alternate plumate - early migrants, paired; fall; Mingo Basin
h	N=26; Condition=middle prebasic molt; Mingo Basin
i	N=24; Condition=early prebasic moltf; Mingo Basin
j	N=11; Condition=middle prealternate molt; fall; Mingo Basin
k	N=17; Condition=late prealternate molt; fall; Mingo Basin
l	N=14; Condition=alternate plumate, unpaired; midwinter; Mingo Basin
m	N=NR; prairie pothole region of North Dakota
n	N=105 birds; Condition=during breeding season; prairie pothole region central North Dakota
o	N=173; Age=after second year; central North Dakota
p	N=177; Age= 2 yr; central North Dakota
q	N=105; Condition=hunter-harvested; fall; Illinois and Mississippi river valleys
r	N=220; Condition=hunter-harvested; fall; Illinois and Mississippi river valleys
s	N=660; central North Dakota
t	N=641; winter; Mississippi Alluvial Valley
u	N=44; Condition=initiation prebasic molt; Mingo Basin
v	N=34; Condition=early prebasic molt; Mingo Basin
w	N=9; Condition= alternate plumage, early migrants, unpaired; fall; Mingo Basin
x	N=21; Condition= alternate plumage, unpaired; midwinter; Mingo Basin
y	N=45
	; Condition=middle prebasic molt; Mingo Basin
z	N=29; Condition=alternate plumage, paired; midwinter; Mingo Basin
aa	N=12; Condition=alternate plumage - early migrants, unpaired; fall; Mingo Basin
ab	N=35; Condition=late prebasic molt; Mingo Basin
ac	N=10; Condition=basic plumage, prespring migration departure; Mingo Basin
ad	N=1,477; winter; Mississippi Alluvial Valley
ae	egg weight; N=27; Age=freshly laid egg; central North Dakota
af	N=36; Age=1 d; central North Dakota
ag	mean body weight of 8 week old mallards; N=15
ah	N=12; Condition=hunter-harvested; fall; Illinois and Mississippi river valleys
ai	N=61; Condition=hunter harvested; fall; Illinois and Mississippi river valleys
aj	N=10; Age=24 d
ak	N=44 birds; Condition=during breeding season; prairie pothole region in North Dakota
al	N=78; Age=after second year; prairie pothole region of North Dakota
am	N=100; western Edmunds Co., South Dakota
an	N=46 nests; prairie pothole region of North Dakota

ao	N=57; Age=second year; prairie pothole region of North Dakota
ap	mean clutch size of successful nests; N=178; spring/summer; Tule Lake and Lower Klamath River National Wildlife Refuges
aq	mean clutch size from first nesting attempt; N=151; see citation for figures showing distribution of nest initiation over time
ar	N=18; spring/summer; Adirondack Mountains
as	mean clutch size; N=40 nests; Condition=breeding; spring; Conaway Ranch
at	N=246; San Joaquin Valley
au	N=227; Northeastern California
av	N=1934; Suisun Marsh
aw	N=521; Sacramento Valley
ax	N=7 nests; prairie pothole region in North Dakota
ay	winter, spring, fall; Mingo Basin, Missouri
az	percent composition of esopageal food samples; N=2,118; winter; Mississippi Alluvial Valley; animal food is primarily aquatic invertebrates
ba	ranges of mean aggregate percent dry mass (stomach contents of ducks from different habitats); N=123; fall; Squaw Creek National Wildlife Refuge
bb	mean aggregate % dry mass of foods collected in mallard stomachs (one season); N=104; winter; Mingo National Wildlife Refuge
bc	N=94; Age=13-18 d; Bear River Migratory Bird Refuge
bd	N=94; Age=19-25 d; Bear River Migratory Bird Refuge
be	N=94; Age=36-45 d; Bear River Migratory Bird Refuge
bf	N=94; Age=26-35 d; Bear River Migratory Bird Refuge
bg	N=94; Age=52-60 d; Bear River Migratory Bird Refuge
bh	N=94; Age=46-55 d; Bear River Migratory Bird Refuge
bi	N=94; Age=1-6 d; Bear River Migratory Bird Refuge
bj	N=94; Age=7-12 d; Bear River Migratory Bird Refuge
bk	N=NR; lower Flathead Valley; in order of exploitance by mallards
bl	mean relative proportions (wet mass) of stomach contents; N=22; fall; St. Lawrence River
bm	Proportion by volume of plant and animal foods in the esophagi of mallards.; N=37; Condition=during breeding season, laying female; drift praire and Missouri Coteau in south-central North Dakota; For complete dietary breakdown, see table 1, p. 198. For breakdown by month (April through June), see table 2, p. 199.
bn	Proportion by volume of plant and animal foods in the esophagi of mallards.; N=41; Condition=during breeding season, nonlaying female; drift prairie and Missouri Coteau in south-central North Dakota; For complete dietary breakdown, see table 1 p. 198.
bo	Proportion by volume of plant and animal foods in the esophagi of mallards.; N=39; Condition=during breeding season; drift prairie and missouri Coteau of south-central North Dakota; For complete dietary breakdown, see table 1 p. 198.
bp	food item occurrence in esophageal contents, expressed as aggregate percent dry weight; N=68 birds; winter; along Platte River, between Lexington and Gibbon, Nebraska; For a detailed breakdown of diet, see table 1, p. 1048 (equivalent to 3% protein, 3.9% fat, 2.3% fiber).
bq	N=306; autumn, August 16 - September 16; Chippewa National Forest; For listing of food sources making up <1% of the diet, see table 3 on p. 110 of article.
br	% occurrence in gizzard contents; N=36; Sandusky Bay, Port Clinton
bs	N=18; spring/summer; Adirondack Mountains
bt	mean incubation period; N=66 nests; near Devil's Lake (48deg10'N, 98deg90'W)
bu	N=NR; lower Flathead Valley
bv	N=22 hens; Age=after second year; prairie pothole region of North Dakota
bw	N=11 hens; Age=after third year; prairie pothole region of North Dakota
bx	N=41 hens; Age=second year; prairie pothole region, North Dkota
by	N=74 hens; prairie pothole region of North Dakota
bz	range of mean food consumption over the breeding period; N=90; food was commercial dry diet
ca	N=183 birds; Ted Shanks Wildlife Management Area; calculated value for a 1,050 g female
cb	food consumption rate for average body weight of 1.23 kg; N=18
cc	food intake of 8 week old mallards; N=15
cd	The value is an average calculated from average intake on eight different diets. See table 1 p. 783 for specific diet averages.; N=12; Age=18 -20 weeks old
ce	The value is an average calculated from average intake on eight different diets. See table 1 p. 783 for specific diet averages.; N=12; Age=18 - 20 weeks
cf	mean daily ingestion of barley at 15 C; N=16; Fall; Value is equivalent to 225 kcal metabolizable E. Individual body weight was 1,130 g.
cg	foraging distance in grazed corn stubble; for foraging distance over other types of terrain, see table 3, p. 1050; N=66; winter; Platte River between Lexington and Gibbon, Nebraska
ch	growth rate estimated from logistic growth curve; N=NR; central North Dakota

ci	maximum growth rate based on body weight; N=72
cj	maximum growth rate relative to asymptotic weight; N=48; Age=0-154 d
ck	maximum growth rate based on body weight; N=63
cl	nest success rate (Mayfield method) among upland nests; N=49; Minnedosa, Manitoba
cm	nest success rate (Mayfield method) among overwater nests; N=47; Minnedosa, Manitoba
cn	Mean hatch success of successful nests; N=178; spring/summer; Tule Lake and Lower Klamath River National Wildlife Refuges
co	proportion of observed nests with at least one successful hatch; N=209; spring/summer; Tule Lake and Lower Klamath River National Wildlife Refuges
cp	proportion of tagged females that hatched clutches; N=18; spring/summer; Adirondack Mountains
cq	proportion of nests that hatched at least one egg; N=60 nests; Condition=breeding; spring; Conaway Ranch
cr	Breeding home range.; N=6; Condition=Laying females; Missouri Coteau of south-central North Dakota
cs	N=6; Missouri Couteau, south-central North Dakota
ct	N=8; spring; Bemidji, Beltrami Co.
cu	Study area was 67% upland forest, 33% lakes and wetlands.; N=8; Condition=during the pre-nest interval; western edge of Chippewa National Forest, Beltrami County
cv	Study area was 67% upland forest, 33% lakes and wetlands.; N=12; Condition=breeding; western edge of Chippewa National Forest, Beltrami Co.
cw	Study area was 67% upland forest, 33% lakes and wetlands.; N=8; Condition=during the laying period; western edge of Chippewa National Forest, Beltrami Co.
cx	N=5; spring; Bemidji, Beltrami Co.
cy	Study area was 67% upland forest, 33% lakes and wetlands.; N=12; Condition=breeding; western edge of Chippewa National Forest, Beltrami Co.
cz	For 1990. Home range defined as area that broods restricted their activities to during rearing period.; N=14 broods; April to mid-June; Lower Klamath National Wildlife Refuge
da	For 1989. Home range defined as area that broods restricted their activities to during rearing period.; N=13 broods; April to mid-June; Lower Klamath National Wildlife Refuge
db	respiration rate during darkness; N=1 bird; Condition=unrestrained; Corresponding heart rate (127.4+/-1.92 SE) was also measured.
dc	respiration rate during darkness; N=1 bird; Condition=unrestrained; Corresponding heart rate (166.6+/-7.13 SE) was also measured.
dd	from USFWS Bird Banding Laboratory data; N=522,261 band recoveries
de	resting heat production; N=3 birds/treatment
df	resting heat production of oiled birds (crude oil) versus controls; N=3 birds/treatment; Tox Exp Tech=in bathing water; Tox Exp Dur=single exposure, 1-4 hrs; Tox Study Dur=2 d; Tox Stat Sig=NR
dg	metabolized energy in 8 week old mallards; N=15
dh	metabolic rate (ml O^2/g/h)-ambient temperature (celcius) relationship; N=20; Age=7 mo; Jan-Feb
di	metabolic rate (ml O^2/g/h)-ambient temperature (celcius) relationship; N=20; Age=7 mo; Jan-Feb
dj	N=NR; western edge of Edmunds Co., South Dakota
dk	N=NR; Condition=during breeding season; Woodworth study area; Calculated from yearly averages. For original values, see table 2, p. 12
dl	N=NR; Condition=during breeding season; Koenig study area; Calculated from yearly averages. For original values, see table 2, p.12.
dm	breeding density; N=396 pairs; Condition=breeding; spring; Conaway Ranch
dn	mean density of breeding birds (maximum density in parentheses); N=130 sample units (160 acres/unit); April-July
do	mean number of ducks counted in U.S. Fish and Wildlife Service mid-winter inventories 1978-1987; N=NR; Sacramento Valley
dp	mean number of ducks counted in U.S. Fish and Wildlife Service mid-winter inventories 1978-1987; N=NR; San Joaquin Valley
dq	mean number of ducks counted in U.S. Fish and Wildlife Service mid-winter inventories 1978-1987; N=NR; San Francisco Delta
dr	mean number of ducks counted in U.S. Fish and Wildlife Service mid-winter inventories 1978-1987; N=NR; Suisun Marsh
ds	mean number of ducks counted in U.S. Fish and Wildlife Service mid-winter inventories 1978-1987; N=NR; Imperial and Coachella Valleys
dt	N=NR; Condition=non-breeding; summer; Conaway Ranch
du	For explanation of classifications, see p. 11 (classifications are Kern NWR, hunting clubs, etc).; N=NR; Condition=wintering birds; September - March; preirrigated croplands
dv	See table 2, p.99, for more detailed means.; N=NR
dw	For explanation of classifications, see p. 11 (classifications are Kern NWR, hunting clubs, etc).; N=NR; Condition=wintering birds; September - March; hunting clubs
dx	For explanation of classifications, see p. 11 (classifications are Kern NWR, hunting clubs, etc).; N=NR; Condition=wintering birds; September - March; miscellaneous
dy	For explanation of classifications, see p. 11 (classifications are Kern NWR, hunting clubs, etc).; N=not reported; Condition=wintering birds; September - March; Tulare Basin, Kern National Wildlife Refuge
dz	For explanation of classifications, see p. 11 (classifications are Kern NWR, hunting clubs, etc).; N=NR; Condition=wintering birds; September - March; evaporation ponds
ea	survival estimates for birds banded 1966-1985; N=13,704; Northern California
eb	survival estimates for birds banded 1972-1981; N=1,240; Central California
ec	Survival rates, not mortality.; N=NR; Lower Klamath National Wildlife Refuge, CA
ed	average survival rate of birds banded 1948-1982; N=NR; Sacramento and San Joaquin Valleys, n.e. CA; see citation for regional values
ee	spring-summer survival (proportion); N=16,562; Alberta, Saskatchewan, Manitoba

ef	fall-winter survival (proportion); N=16,562; Alberta, Saskatchewan, Manitoba
eg	spring-summer survival (proportion); N=11,139; Apr, May, Aug, Sept; Alberta, Saskatchewan, Manitoba
eh	summer to spring survival (proportion); N=11,139; Apr, May, Aug, Sept; Alberta, Saskatchewan, Manitoba
ei	estimated annual survival rate (1960-1971); N=NR; Malheur National Wildlife Refuge
ej	survival of tagged females over the breeding period; N=22; spring/summer; Adirondack Mountains
ek	survival estimates for birds banded 1972-1981; N=776; Central California
el	survival estimates for birds banded 1966-1985; N=18,289; Northern California
em	average survival rate of birds banded 1948-1982; N=NR; Sacramento and San Joaquin Valleys, n.e. CA; see citation for regional values
en	spring-summer survival (proportion); N=18,650; Alberta, Saskatchewan, Manitoba
eo	fall-winter survival (proportion); N=18,650; Alberta, Saskatchewan, Manitoba
ep	estimated annual survival rate (1960-1971); N=NR; Malheur National Wildlife Refuge
eq	survival rate; N=NR; spring-summer; Chippewa National Forest
er	Survival estimates determined using the Kaplan-Meier method; N=50; Age=50 days; spring; Lower Klamath National Wildlife Refuge
es	Survival estimates determined using the Kaplan-Meier method; N=50; Age=10 days; spring; Lower Klamath National Wildlife Refuge
et	Survival estimates determined using the Kaplan-Meier method; N=41; Age=50 days; spring; Lower Klamath National Wildlife Refuge
eu	Survival estimates determined using the Kaplan-Meier method; N=41; Age=10 days; spring; Lower Klamath National Wildlife Refuge
ev	Survival estimates determined using the Kaplan-Meier method; N=36; Age=10 days; spring; Lower Klamath National Wildlife Refuge
ew	survival estimates for birds banded 1966-1985; N=8,205; Central California
ex	survival estimates for birds banded 1972-1981; N=1,396; Central California
ey	Survival rates, not mortality.; N=NR; Lower Klamath National Wildlife Refuge
ez	average survival rate of birds banded 1948-1982; N=NR; Sacramento and San Joaquin Valleys, n.e. CA; see citation for regional values
fa	estimated annual survival rate (1960-1971); N=NR; Malheur National Wildlife Refuge
fb	survival estimates for birds banded 1972-1981; N=1,396; Central California
fc	survival estimates for birds banded 1966-1985; N=11,372; Northern California
fd	average survival rate of birds banded 1948-1982; N=NR; Sacramento and San Joaquin Valleys, n.e. CA; see citation for regional values
fe	estimated annual survival rate (1960-1971); N=NR; Malheur National Wildlife Refuge
ff	mean 17-day survival rate; N=223; Age=17 d; Northern Prairie Wildlife Research Center, Jamestown (46deg53'N, 98deg38'W)
fg	spring-summer survival (proportion); N=1,246; Apr, May; Alberta, Saskatchewan, Manitoba
fh	mean length of drainage ditch (5 ft wide) defended; N=8 ducks; Condition=breeding; spring; Conaway Ranch
fi	Average date of hatching for 3 years straight (1963-65); N=50 broods; Northwest Territories, Canada
fj	N=NR; spring/summer; Tule Lake and Lower Klamath River National Wildlife Refuges
fk	peak hatching period; N=NR; Condition=breeding; spring; Conaway Ranch
fl	time of clutch initiation; N=265 nests; eastern - south central North Dakota, near Jamestown
fm	N=NR; Age=second year females; spring; prairie pothold region of North Dakota
fn	arrival at breeding grounds; N=NR; spring; prairie pothole region of the U.S.; The authors looked at the available literature and calculated the above average value.
fo	N=NR; Age=three years and older; spring; prairie pothole region of North Dakota
fp	timing of departure from breeding grounds; N=34; Suisun Marsh, Grizzly Island
fq	mean annual date of molt initiation (over 3 yr); N=131
fr	mean annual date of molt initiation (over 3 yr); N=126
fs	N=NR; Chippewa National Forest, east of Bemidji, Minnesota
ft	N=NR; prairie pothole region of North Dakota
fu	period between first observed nest to last observed hatches; N=209; spring/summer; Tule Lake and Lower Klamath River National Wildlife Refuges
fv	date of nest initiation; N=151
fw	time from earliest clutch laid to last clutch hatched; N=NR; Condition=breeding; spring; Conaway Ranch
fx	N=NR; Chippewa National Forest, east of Bemidji Minnesota

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