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APPENDIX 1

Collection localities for the four species of *Dendroctonus* examined.

Dendroctonus adjunctus—Federal District: National Park "El Desierto de los Leones" (19°20'N, 99°38'W); National Park "El Ajusco" (19°13'N, 99°15'W); El Charco (19°17'N, 99°21'W). State of México: Ciudad de la Ciencia y la Tecnología-IPN (19°04'30"N, 98°58'W); Coatepec de Harinas (18°57'N, 99°45'W); Nevado de Toluca (19°10'N, 99°48'W). Puebla: Tlahuapan, Municipality of Sta. Rita Tlahuapan (19°19'N, 99°38'W).

Dendroctonus frontalis—State of México: Paraje Los Venados, Cascadas de Nanchititla, Municipality of Tejuipilco (18°51'N, 100°26'W). Michoacán: "Ojo de Agua de los Sauces," Municipality of Tancitaro (19°14'N, 102°17'W); "La Mesa," Municipality of Charo (19°36'N, 100°56'W). Oaxaca: "Los Azufres,"

Municipality of Loxicha (15°59'N, 96°29'W). Querétaro: "Los Herrera," Municipality of San Joaquín (20°55'N, 99°34'W).

Dendroctonus mexicanus—State of México: "El Caminante," 9 km W of Salazar (19°18'N, 99°25'W); "Tuxtley y La Alameda," Municipality of Chapa de Mota (19°48'N, 99°34'W); Rancho "El Paraíso," Municipality of San Vicente Chimalhuacán (19°01'N, 98°47'W); Jiquipilco (19°33'N, 99°37'W); "Metapameles," San Rafael (19°12'N, 98°45'W); San Francisco Zentlalpan (19°09'N, 98°48'W); Tepecahuixco (19°09'N, 98°43'W); "Bocanegra," Municipality of Villa del Carbón (19°43'N, 99°29'W); Cerro Gordo, Municipality of Valle de Bravo (19°07'N, 100°09'W). Michoacán: Cerro del Timbe (19°42'N, 101°38'W); "El Mirador," km 5 of Carretera Pátzcuaro-Sta. Clara del Cobre (19°29'N, 101°36'W); south slope of Cerro de la Charanda, Municipality of Uruapan (19°26'N, 102°04'W); Rancho "Milpillás," km 3 of Carretera San Juan Tumbio-Tancitaro (19°25'N, 102°09'W); San Juan Tumbio (19°30'N, 101°46'W); "El Predegal," Municipality of Madero (19°24'N, 101°21'W); "Agua Blanca," Municipality of Ciudad Hidalgo (19°41'N, 100°44'W). Querétaro: "Los Herrera," Municipality of San Joaquín (20°55'N, 99°34'W).

Dendroctonus valens—State of México: Ciudad de la Ciencia y la Tecnología-IPN (19°04'30"N, 98°58'W); "El Caminante," 9 km W of Salazar (19°18'N, 99°25'W); San Francisco Zentlalpan (19°09'N, 98°48'W); "Metepameles," San Rafael (19°12'N, 98°45'W). Michoacán: Rancho "Milpillás," km 3 of Carretera San Juan Nuevo-Tancitaro (19°25'N, 102°09'W). Puebla: Tlahuapan, Municipality of Sta. Rita Tlahuapan (19°19'N, 99°38'W).

GREAT HORNED OWL FOOD HABITS AT MONO LAKE, CALIFORNIA

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Here we analyze contents of pellets produced by Great Horned Owls (*Bubo virginianus*) on the two largest islands of Mono Lake, California, to establish baseline data on the island fauna in anticipation of possible future changes in local

ecology arising from falling lake levels from water diversions. Mono Lake, a saline lake situated in eastern California (Mono County) between the Sierra Nevada and Great Basin ranges, is about 178 km² in extent and has two islands, Paoha

and Negit, and abo to the islands. Paoha 4 km from the mai in area and is abou our study in 1990- the mainland by a eral hundred meters of shallow water. V was described by B We collected 219 on Paoha on 23 Au near the marsh on th (Morrison et al., 1 were collected bene 9 June, and 23 Ju fissure in the center

Skeletal remains species when possibl Museum of Vertebr California, Berkeley as scorpions or inse prey item was repres though one pellet o items); therefore, pel separately, and the m agnostic elements wer imum number of prey probably overestimate (especially lagomorph eaten over several da tebrate prey, a diagno set of bones that co (e.g., a cranium, a low For arthropods, a di recognizable exoskele mains were grouped large (larger than or Grebe), medium (sma but larger than a *Brev cyanocephalus*), and s smaller than a Brewer unidentified bird rem. fonia Gulls which ne islets, but some may hav such as grebes (*Podicep Brewer's Blackbird* wa the "small" category be the common terrestrial b et al., in press). Based Jehl and Mahoney (198 into the medium or larg On both islands, man (73.9% on Paoha and quency, of prey appear

59°N, 96°29'W). Municipality of San Joaquin

State of México: "El zar (19°18'N, 99°25'W); Municipality of Chapa de Incho "El Paraiso," Municipalidad de Chimalhuacán (19°01'N, 99°37'W); "Metapa-98°45'W); San Francisco 48'W); Tepecahuixco "egra," Municipality of 99°29'W); Cerro Gordo, vo (19°07'N, 100°09'W). e (19°42'N, 101°38'W); era Pátzcuaro-Sta. Clara N); south slope of Cerro y of Uruapan (19°26'N, las," km 3 of Carretera (19°25'N, 102°09'W); San (1°46'W); "El Predegal," 24'N, 101°21'W); "Agua udad Hidalgo (19°41'N, Herrera," Municipality °34'W). of México: Ciudad de la (19°04'30"N, 98°58'W); / of Salazar (19°18'N, Zentlalpan (19°09'N, ' San Rafael (19°12'N, ho "Milpillan," km 3 of o-Tancitaro (19°25'N, an, Municipality of Sta. 9°38'W).

and Negit, and about 15 islets in clusters adjacent to the islands. Paoha is about 7.7 km² in area and 4 km from the mainland. Negit is about 1.3 km² in area and is about 1 km from Paoha. During our study in 1990-1991, Negit was connected to the mainland by a land bridge consisting of several hundred meters of mud flats and a few meters of shallow water. Vegetation in the Mono Basin was described by Burch et al. (1977).

We collected 219 pellets beneath a cliff roost on Paoha on 23 August 1990 and 26 April 1991 near the marsh on the southeast side of the island (Morrison et al., 1992). On Negit, 188 pellets were collected beneath one roost site on 6 May, 9 June, and 23 June 1991 in a deep volcanic fissure in the center of the island.

Skeletal remains in pellets were identified to species when possible using the collection of the Museum of Vertebrate Zoology, University of California, Berkeley. Arthropods were classified as scorpions or insects. We assumed that each prey item was represented in only one pellet (although one pellet often contained many prey items); therefore, pellet contents were examined separately, and the most frequently occurring diagnostic elements were used to estimate the maximum number of prey items present. This method probably overestimates the numbers of larger prey (especially lagomorphs) which may be cached and eaten over several days (Marti, 1987). For vertebrate prey, a diagnostic element was any bone or set of bones that could be identified to species (e.g., a cranium, a lower jaw, or a pair of femora). For arthropods, a diagnostic element was any recognizable exoskeleton fragment. Most bird remains were grouped into three size categories: large (larger than or equal in size to an Eared Grebe), medium (smaller than an Eared Grebe, but larger than a Brewer's Blackbird [*Euphagus cyanocephalus*]), and small (equal in size to or smaller than a Brewer's Blackbird). Most large unidentified bird remains were probably California Gulls which nest in large colonies on the islets, but some may have been other aquatic birds such as grebes (*Podiceps*) and terns (*Sterna*). The Brewer's Blackbird was chosen as the cutoff for the "small" category because it is the largest of the common terrestrial birds on either island (Hall et al., in press). Based on body weights given by Jehl and Mahoney (1987), gull chicks would fall into the medium or large size-class.

On both islands, mammals comprised the bulk (73.9% on Paoha and 84.0% on Negit), by frequency, of prey appearing in pellets (Table 1).

TABLE 1.—Prey identified from 219 and 188 Great Horned Owl pellets collected on Paoha and Negit islands, Mono Lake, California.

Prey	Paoha (n = 518)		Negit (n = 536)	
	Num- ber	Per- cent	Num- ber	Per- cent
Mammals				
Lagomorphs	6	1.2	42	7.9
<i>Lepus californicus</i>			1	0.2
<i>Sylvilagus</i> spp.	5	1.0	32	6.0
Unidentified	1	0.2	9	1.7
Rodents	359	69.3	380	70.9
<i>Peromyscus</i>				
<i>maniculatus</i>	221	42.7	371	69.2
<i>Microtus montanus</i>	123	23.7	4	0.7
<i>Dipodomys</i> spp.			3	0.6
Unidentified	15	2.9	2	0.4
Chiropterans	10	1.9	7	1.3
<i>Myotis</i> spp.	10	1.9	6	1.1
Unidentified			1	0.2
Unidentified mammal	8	1.5	21	3.9
Birds	85	16.4	55	10.4
<i>Podiceps nigricollis</i>	5	1.0		
Unidentified rail	1	0.2		
<i>Larus californicus</i>	9	1.7	6	1.3
Unidentified owl	2	0.4		
Unidentified blackbird	2	0.4		
Unidentified (large) ¹	24	4.6	38	7.1
Unidentified (medium) ²	6	1.2	6	1.1
Unidentified (small) ³	36	6.9	5	0.9
Unidentified vertebrate	5	1.0	23	4.3
Insects	43	8.3	8	1.5
Scorpions	2	0.4		

¹ Larger than or equal in size to *P. nigricollis*.

² Smaller than *P. nigricollis* but larger than *E. cyanocephalus*.

³ Smaller than or equal in size to *E. cyanocephalus*.

Rodents were the most frequently occurring prey, at about 70% on both islands. Roughly two thirds of the rodent portion of prey remains on Paoha was deer mice and one third montane voles, whereas on Negit the rodent portion was almost entirely deer mice. Rabbits (mostly cottontails) appeared occasionally in pellets from Negit (7.8%), but rarely in pellets from Paoha (1.2%). Bats appeared infrequently (<2%) in pellets from both islands (Table 1).

Between-island differences in the mammalian species composition of the prey remains largely reflected differences in the mammalian species composition of the islands. Deer mice have been

