

Supplementary materials

Extracting and Amplifying DNA From Fecal Samples

Per the manufacturer's protocols, we used QIAmp DNA Stool Kits to extract DNA from each fecal sample. Next, a 157 base pair region of the cytochrome c oxidase I (COI) gene was amplified from these extractions using the arthropod-specific primers described in Zeale et al. (2011). The PCR mixture consisted of the following: 4 μ L of template DNA, 6 μ L of 5x GoTaq Reaction Buffer, 2.4 μ L of 15mM MgCl₂, 2.4 μ L 1X BSA, 1.5 μ L of forward and reverse primers (10nmol), 0.2 μ L GoTaq polymerase, 2.4 μ L of dNTPs (2.5mM), and sterile molecular-grade water. PCR amplification conditions were as follows: 5 min at 95°C (initial denaturation), 35 cycles for 30 s at 95°C of denaturation, 45 s at 42°C (annealing), followed by extension at 72°C for 45 s, and a final extension of 5 min at 72°C. PCR products were visualized in 1% agarose gel (1x TAE buffer & 0.5 μ g/mL Gel Red) on a Bio-Rad gel imaging system (Bio-Rad, Hercules, CA).

Library Preparation

Samples were prepared for HTS on the Illumina platform using NEBNext library preparation kits and multiplexing primers. PCR reactions were cleaned following Faircloth and Glenn (2011), which outlines a modified bead clean-up protocol of Rohland and Reich (2012). NEBNext Ultra II Library Prep Kit for Illumina were used for end repair and adaptor ligation after which amplicons were again cleaned using the same modified bead clean-up protocol mentioned above. Next, we used NEBNext Multiplex Oligos for index primer enrichment, followed by another cycle of bead clean-up. DNA concentration of each library was quantified using a Qubit Fluorometer (ThermoFisher Scientific). We then pooled up to 95 sample libraries and one negative control for each sequencing run. Final pooled libraries were cleaned using the aforementioned bead clean-up protocol, and quantified the resulting libraries on a BioAnalyzer and sequencing on the Illumina MiSeq (2 x 300 v3 flow cell, paired end) at the Institute for Integrated Genome Biology at the University of California Riverside in Riverside, CA, USA.

Targeted PCR to Detect Strawberry

In order to determine which birds consumed strawberry, we used a strawberry-specific PCR primer (F.ananassa-FxaAGA21F11: Honjo et al. 2011) to screen extracted fecal samples for the presence of strawberry DNA. Each PCR reaction mixture consisted of the following: 3 μ L of 5x GoTaq Reaction Buffer, 1.2 μ L of 15mM MgCl₂, 1.2 μ L 1X BSA, 0.37 μ L of forward and reverse primers (10nmol), 0.1 μ L GoTaq polymerase, 1.2 μ L of dNTPs (2.5mM), and sterile molecular-grade water. PCR reaction conditions were as follows: 5 min of 95°C (initial denaturation), 35 cycles for 30 s at 95°C for denaturation, 58°C for 45 s (annealing), followed by extension for 45 s at 72°C, and a final extension step at 72°C for 5 min. Presence of strawberry in a sample was determined by visualization on a 1% agarose gel, where bands at ~180 bp indicated the presence of strawberry.

Supplementary Tables

Table S1. Common English names, Scientific names, and four-letter codes for birds in the detected during bird surveys.

English name	Scientific name	Four-letter code
Acorn Woodpecker	<i>Melanerpes formicivorus</i>	ACWO
Allen's Hummingbird	<i>Selasphorus sasin</i>	ALHU
American Crow	<i>Corvus brachyrhynchos</i>	AMCR
American Goldfinch	<i>Carduelis tristis</i>	AMGO
American Robin	<i>Turdus migratorius</i>	AMRO
Anna's Hummingbird	<i>Calypte anna</i>	ANHU
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>	ATFL
Band-tailed Pigeon	<i>Patagioenas fasciata</i>	BTPI
Barn Swallow	<i>Hirundo rustica</i>	BARS
Belted Kingfisher	<i>Megaceryle alcyon</i>	BEKI
Bewick's Wren	<i>Thryomanes bewickii</i>	BEWR
Black Phoebe	<i>Sayornis nigricans</i>	BLPH
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	BHGB
Blue-grey Gnatcatcher	<i>Poliophtila caerulea</i>	BGGN
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	BRBL
Brown Creeper	<i>Certhia americana</i>	BRCR
Brown-headed Cowbird	<i>Molothrus ater</i>	BHCO
Bullock's Oriole	<i>Icterus bullockii</i>	BUOR
Bushtit	<i>Psaltiriparus minimus</i>	BUSH
California Quail	<i>Callipepla californica</i>	CAQU
California Scrub-jay	<i>Aphelocoma californica</i>	CASJ
California Thrasher	<i>Toxostoma redivivum</i>	CATH
California Towhee	<i>Pipilo crissalis</i>	CALT
Cedar Waxwing	<i>Bombycilla cedrorum</i>	CEWA
Chestnut-backed Chickadee	<i>Parus rufescens</i>	CBCH
Chipping Sparrow	<i>Spizella passerina</i>	CHSP
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	CLSW
Common Raven	<i>Corvus corax</i>	CORA
Common Yellowthroat	<i>Geothlypis trichas</i>	COYE
Cooper's Hawk	<i>Accipiter cooperii</i>	COHA
Dark-eyed Junco	<i>Junco hyemalis</i>	DEJU
Downy Woodpecker	<i>Picoides pubescens</i>	DOWO
Eurasian Collared-dove	<i>Streptopelia decaocto</i>	EUCD
European Starling	<i>Sturnus vulgaris</i>	EUST
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	GCSP
Great Egret	<i>Casmerodius albus</i>	GREG
Great-tailed Grackle	<i>Quiscalus mexicanus</i>	GTGR

Hairy Woodpecker	<i>Picoides villosus</i>	HAWO
Hooded Oriole	<i>Icterus cucullatus</i>	HOOR
Horned Lark	<i>Eremophila alpestris</i>	HOLA
House Finch	<i>Carpodacus mexicanus</i>	HOFI
House Sparrow	<i>Passer domesticus</i>	HOSP
House Wren	<i>Troglodytes aedon</i>	HOWR
Hutton's Vireo	<i>Vireo huttoni</i>	HUVI
Killdeer	<i>Charadrius vociferus</i>	KILL
Lark Sparrow	<i>Chondestes grammacus</i>	LASP
Lawrence's Goldfinch	<i>Carduelis lawrencei</i>	LAGO
Lazuli Bunting	<i>Passerina amoena</i>	LABU
Lesser Goldfinch	<i>Carduelis psaltria</i>	LEGO
Mallard	<i>Anas platyrhynchos</i>	MALL
Marsh Wren	<i>Cistothorus palustris</i>	MAWR
Mourning Dove	<i>Zenaida macroura</i>	MODO
Northern Flicker	<i>Colaptes auratus</i>	NOFL
Northern Mockingbird	<i>Mimus polyglottos</i>	NOMO
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	NRWS
Nuttall's Woodpecker	<i>Picoides nuttallii</i>	NUWO
Oak Titmouse	<i>Baeolophus inornatus</i>	OATI
Olive-sided Flycatcher	<i>Contopus cooperi</i>	OSFL
Orange-crowned Warbler	<i>Vermivora celata</i>	OCWA
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>	PSFL
Purple Finch	<i>Carpodacus purpureus</i>	PUFI
Pygmy Nuthatch	<i>Sitta pygmaea</i>	PYNU
Red-shouldered Hawk	<i>Buteo lineatus</i>	RSHA
Red-tailed Hawk	<i>Buteo jamaicensis</i>	RTHA
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	RWBB
Ring-necked Pheasant	<i>Phasianus colchicus</i>	RNEP
Rock Pigeon	<i>Columba livia</i>	ROPI
Rufous Hummingbird	<i>Selasphorus rufus</i>	RUFU
Savannah Sparrow	<i>Passerculus sandwichensis</i>	SAVS
Sharp-shinned Hawk	<i>Accipiter striatus</i>	SSHA
Song Sparrow	<i>Melospiza melodia</i>	SOSP
Spotted Towhee	<i>Pipilo maculatus</i>	SPTO
Steller's Jay	<i>Cyanocitta stelleri</i>	STJA
Swainson's Thrush	<i>Catharus ustulatus</i>	SWTH
Tree Swallow	<i>Tachycineta bicolor</i>	TRES
Violet-green Swallow	<i>Tachycineta thalassina</i>	VGSW
Warbling Vireo	<i>Vireo gilvus</i>	WAVI
Western Bluebird	<i>Sialia mexicana</i>	WEBL
Western Kingbird	<i>Tyrannus verticalis</i>	WEKI
Western Tanager	<i>Piranga ludoviciana</i>	WETA

Western Wood-pewee	<i>Contopus sordidulus</i>	WEPW
Whimbrel	<i>Numenius phaeopus</i>	WHIM
White-breasted Nuthatch	<i>Sitta carolinensis</i>	WBNH
Wild Turkey	<i>Meleagris gallopavo</i>	WITU
Wilson's Warbler	<i>Wilsonia pusilla</i>	WIWA
Wrentit	<i>Chamaea fasciata</i>	WREN
Yellow Warbler	<i>Dendroica petechia</i>	YEWA

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