Supplementary Files

Table S1. Summary of distance estimates (meters) from traditional human observer collected point-count data of four species of riparian birds, Lower Verde River, Arizona (USA). We established 21 point-count stations at three study reaches (Beasley Flat n=7, Childs n=8, Sheep Bridge n=6) and surveyed each point twice during May 2018. Shading separates species and no Yellow-billed Cuckoos were detected from point-counts (NA).

Species	Reach	Distance mean	Distance range
Bell's Vireo	Beasley Flat	68.3	10-140
	Childs	44.4	20-100
	Sheep Bridge	40.9	14-84
Summer Tanager	Beasley Flat	34.6	12-78
	Childs	32.2	1-70
	Sheep Bridge	33.1	16-49
Yellow Warbler	Beasley Flat	35.0	9-104
	Childs	27.2	2-77
	Sheep Bridge	28.7	5-72
Yellow-billed Cuckoo	Beasley Flat	NA	NA
	Childs	NA	NA
	Sheep Bridge	NA	NA

Table S2. Recording data used in acoustic classifier training for Bell's Vireo, Summer Tanager, and Yellow Warbler (shading separates species) obtained from the Macaulay Library of the Cornell Lab of Ornithology (www.macaulaylibrary.org) or Xeno-Canto sound library (www.xeno-canto.org).

Species	Recording ID	Source
Bell's Vireo	11717	Macaulay
	11720	Macaulay
	17186	Macaulay
	18779	Macaulay
	20830	Macaulay
Summer Tanager	XC35381	Xeno-Canto
	XC135246	Xeno-Canto
	XC234333	Xeno-Canto
	XC294192	Xeno-Canto
	XC323197	Xeno-Canto
	XC375024	Xeno-Canto
	XC493555	Xeno-Canto
	XC494696	Xeno-Canto
Yellow Warbler	XC80613	Xeno-Canto
	XC144117	Xeno-Canto
	XC179548	Xeno-Canto
	XC288474	Xeno-Canto
	XC292932	Xeno-Canto
	XC314487	Xeno-Canto
	XC384901	Xeno-Canto

Table S3. Each acoustic recorder had some duration of malfunction and did not record data, or some song files were corrupted for each of the four species. Recorder were deployed in 2018 from 6 May to 2 Sept at Beasley Flat (plots B1-B3) and Childs (C1-C3), and from 20 May to 2 Sept at Sheep Bridge (S1-S3). Shading separates reaches. Numbers in the table show the number of days with no data.

	Yellow Warbler				**Bell's Vireo**				**Summer Tanager**				**Yellow-billed Cuckoo**			
	May	June	July	Aug	May	June	July	Aug	May	June	July	Aug	May	June	July	Aug
B1			5				5				5				6	21
B2			5				5				5			1	9	19
B3		22	18			22	18			22	18			22	18	5
C1			1				1								1	
C2			2				2				2				2	
C3	4		2		4		2		4		2		4		2	
S1		1				1				1				1		8
S2		22	11			22	11			29	9			22	13	14
S3		1				1				1			2	6	14	27

Table S4. To compare the relative rank of bird quantification by point-count methods (n = 21 and measures number of individuals) versus passive acoustic recorders (n = 9 and measures number of days), we used a non-parametric rank test. Rank was specific to the method (point count vs. acoustic recorders) with the most birds counted or days detected ranked as 1 and the fewest ranked at 12. Raw data from three study reaches along the Lower Verde River, Arizona (USA). Shading separates species.

Species	Reach	Abundance (individuals) point-count surveys	Rank	Days detected by acoustic recorders	Rank
Bell's Vireo	Beasley Flat	1	9	35	9
	Childs	8	3.5	108	1
	Sheep Bridge	4	7	57	7.5
Summer Tanager	Beasley Flat	5	6	72	4
	Childs	7	5	80	2
	Sheep Bridge	3	8	57	7.5
Yellow Warbler	Beasley Flat	8	3.5	68	5
	Childs	13	1	64	6
	Sheep Bridge	9	2	76	3
Yellow-billed Cuckoo	Beasley Flat	0	11	4	11
	Childs	0	11	10	10
	Sheep Bridge	0	11	2	12

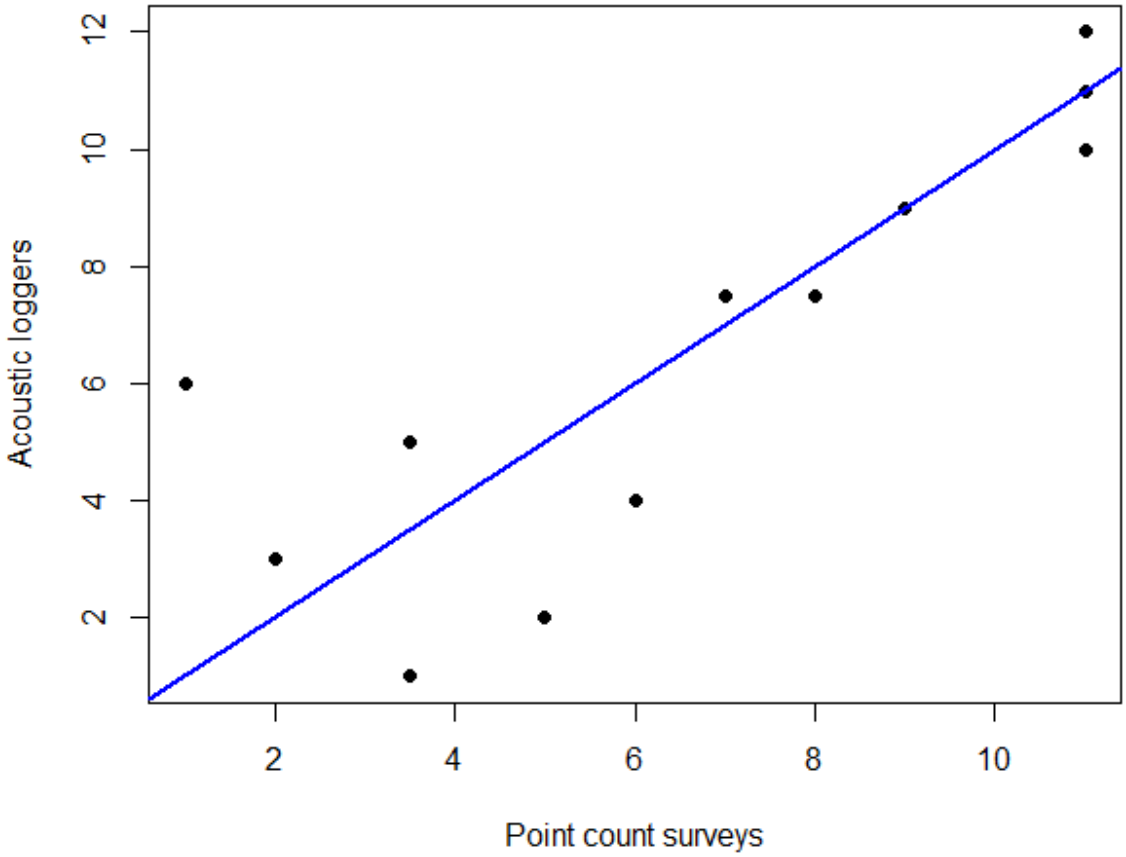

Figure S1. Comparison of the relative rank of quantification of birds by point-count methods or by passive acoustic recorders. Blue line is 1:1 ratio and points are species by reach (raw data in Table S4). On the X and Y axis, Rank 1 has the most birds/bird activity quantified and Rank 12 has the fewest. Methods were similar in ranking results (Wilcoxon signed-rank test: V=29.5, P=0.878).