

**Appendix 1. Detailed list with GBIF's doi, number of occurrences and record cleaning parameters for the 35 owl species considered in this study.**

Species	Common name	Occurrence records	Filter distance (km)	Unique occurrence records	GBIF's access number (DOI)
<i>Tyto alba</i>	American Barn Owl	1,685	20	507	<a href="https://doi.org/10.15468/dl.6dmuvb">https://doi.org/10.15468/dl.6dmuvb</a>
<i>Psiloscopus flammeolus</i>	Flammulated Owl	344	5	154	<a href="https://doi.org/10.15468/dl.u3neqy">https://doi.org/10.15468/dl.u3neqy</a>
<i>Megascops kennicottii</i>	Western Screech-Owl	835	10	220	<a href="https://doi.org/10.15468/dl.ahnwwc">https://doi.org/10.15468/dl.ahnwwc</a>
<i>Megascops asio</i>	Eastern Screech-Owl	402	10	145	<a href="https://doi.org/10.15468/dl.e7xk64">https://doi.org/10.15468/dl.e7xk64</a>
<i>Megascops cooperi</i>	Pacific Screech-Owl	1,531	10	255	<a href="https://doi.org/10.15468/dl.pyztht">https://doi.org/10.15468/dl.pyztht</a>
<i>Megascops trichopsis</i>	Whiskered Screech-Owl	1,493	10	353	<a href="https://doi.org/10.15468/dl.ubfgby">https://doi.org/10.15468/dl.ubfgby</a>
<i>Megascops barbarus</i>	Bearded Screech-Owl	173	2	55	<a href="https://doi.org/10.15468/dl.ckbfx8">https://doi.org/10.15468/dl.ckbfx8</a>
<i>Megascops seductus</i>	Balsas Screech-Owl	288	2	122	<a href="https://doi.org/10.15468/dl.wbhuye">https://doi.org/10.15468/dl.wbhuye</a>
<i>Megascops clarkii</i>	Bare-shanked Screech-Owl	450	2	177	<a href="https://doi.org/10.15468/dl.33g28q">https://doi.org/10.15468/dl.33g28q</a>
<i>Megascops choliba</i>	Tropical Screech-Owl	1,160	2	552	<a href="https://doi.org/10.15468/dl.exqmxg">https://doi.org/10.15468/dl.exqmxg</a>
<i>Megascops vermiculatus</i>	Vermiculated Screech-Owl	186	2	103	<a href="https://doi.org/10.15468/dl.7g26ac">https://doi.org/10.15468/dl.7g26ac</a>
<i>Megascops guatemalae</i>	Guatemalan Screech-Owl	1,573	10	395	<a href="https://doi.org/10.15468/dl.zthqtf">https://doi.org/10.15468/dl.zthqtf</a>
<i>Bubo virginianus</i>	Great Horned Owl	2,134	20	594	<a href="https://doi.org/10.15468/dl.m6p33w">https://doi.org/10.15468/dl.m6p33w</a>
<i>Pulsatrix perspicillata</i>	Spectacled Owl	1,477	10	292	<a href="https://doi.org/10.15468/dl.zdem6b">https://doi.org/10.15468/dl.zdem6b</a>
<i>Strix squamulata</i>	Mexican Wood Owl	8,000	20	756	<a href="https://doi.org/10.15468/dl.j82wnb">https://doi.org/10.15468/dl.j82wnb</a>
<i>Strix nigrolineata</i>	Black-and-white Owl	1,922	10	373	<a href="https://doi.org/10.15468/dl.ne3v7n">https://doi.org/10.15468/dl.ne3v7n</a>
<i>Strix occidentalis</i>	Spotted Owl	174	10	48	<a href="https://doi.org/10.15468/dl.rpev6x">https://doi.org/10.15468/dl.rpev6x</a>
<i>Strix fulvescens</i>	Fulvous Owl	592	10	85	<a href="https://doi.org/10.15468/dl.zs73cq">https://doi.org/10.15468/dl.zs73cq</a>
<i>Strix sartorii</i>	Barred Owl	93	5	37	<a href="https://doi.org/10.15468/dl.9bhbx5">https://doi.org/10.15468/dl.9bhbx5</a>
<i>Lophotrix cristata</i>	Crested Owl	1,107	10	231	<a href="https://doi.org/10.15468/dl.m5t2tt">https://doi.org/10.15468/dl.m5t2tt</a>
<i>Glaucidium gnoma</i>	Mountain Pygmy-Owl	1,578	10	325	<a href="https://doi.org/10.15468/dl.bjjfcr">https://doi.org/10.15468/dl.bjjfcr</a>
<i>Glaucidium cobanense</i>	Guatemalan Pygmy-Owl	380	5	105	<a href="https://doi.org/10.15468/dl.emn3fz">https://doi.org/10.15468/dl.emn3fz</a>
<i>Glaucidium costaricanum</i>	Costa Rican Pygmy-Owl	374	5	83	<a href="https://doi.org/10.15468/dl.8f8d8r">https://doi.org/10.15468/dl.8f8d8r</a>
<i>Glaucidium sanchezi</i>	Tamaulipas Pygmy-Owl	300	2	87	<a href="https://doi.org/10.15468/dl.h5mt86">https://doi.org/10.15468/dl.h5mt86</a>
<i>Glaucidium palmarum</i>	Colima Pygmy-Owl	1,605	10	193	<a href="https://doi.org/10.15468/dl.dmp4w5">https://doi.org/10.15468/dl.dmp4w5</a>
<i>Glaucidium griseiceps</i>	Central American Pygmy-Owl	755	10	173	<a href="https://doi.org/10.15468/dl.jeh5vf">https://doi.org/10.15468/dl.jeh5vf</a>
<i>Glaucidium ridgwayi</i>	Ridgway's Pygmy-Owl	577	10	221	<a href="https://doi.org/10.15468/dl.wzdf97">https://doi.org/10.15468/dl.wzdf97</a>
<i>Micrathene whitneyi</i>	Elf Owl	957	5	312	<a href="https://doi.org/10.15468/dl.wdvkfv">https://doi.org/10.15468/dl.wdvkfv</a>
<i>Athene cucularia</i>	Burrowing Owl	451	10	428	<a href="https://doi.org/10.15468/dl.qrh7xr">https://doi.org/10.15468/dl.qrh7xr</a>
<i>Aegolius acadicus</i>	Northern Saw-whet Owl	246	20	52	<a href="https://doi.org/10.15468/dl.farztz">https://doi.org/10.15468/dl.farztz</a>
<i>Aegolius ridgwayi</i>	Unspotted Saw-whet Owl	1,003	2	86	<a href="https://doi.org/10.15468/dl.p765z4">https://doi.org/10.15468/dl.p765z4</a>
<i>Asio stygius</i>	Stygian Owl	252	10	89	<a href="https://doi.org/10.15468/dl.f3h5q9">https://doi.org/10.15468/dl.f3h5q9</a>
<i>Asio otus</i>	Long-eared Owl	169	5	68	<a href="https://doi.org/10.15468/dl.jpaz5d">https://doi.org/10.15468/dl.jpaz5d</a>
<i>Asio clamator</i>	Striped Owl	1,491	20	171	<a href="https://doi.org/10.15468/dl.9w9ys6">https://doi.org/10.15468/dl.9w9ys6</a>
<i>Asio flammeus</i>	Short-eared Owl	211	20	70	<a href="https://doi.org/10.15468/dl.p9fj9f">https://doi.org/10.15468/dl.p9fj9f</a>