Birdcall Identification: Bird Choice*

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Abstract

Explains bird choice for a project in which matched filters and spectrographic analysis were used to identify birdcalls.

1 Bird Choice

We elected to use six different birdcalls in our project: the common loon wail; the common loon tremolo; the red-tailed hawk cry; the red-tailed hawk shriek; the bobwhite quail mating-call; and the ferruginous pygmy-owl hoot. The group selected these calls based upon two major criteria. Each call needed to be available from multiple sources, and each call had to be audibly different from the other calls selected.

The project group contains no bird experts, so we used only prerecorded birdcall clips as samples. Such audio clips saved us the necessity of making field recordings. Also, the clips' creators, who presumably possess more ornithological expertise than we, had already identified the birds present in each recording. For formatting reasons, we chose only audio clips saved as wav files. However, with this constraint, relatively few bird types suited our needs. Adults of each bird species have up to fourteen or fifteen call types. Of these types, frequently only one or two are available as recordings, and of recorded types, almost none exist in multiple, wav-file examples on the internet, or in libraries. This significantly reduced our pool of candidate birds.

Our second major criterion was that the chosen birdcalls be audibly and spectrographically distinctive. Although spectrographic analysis can easily reveal differences between signals in the frequency domain, human error is less likely when group members can tell the difference between time-domain calls by ear. Having a variety of birdcalls, some similar, some radically different, also produces a more interesting analysis than the use of entirely alike, or entirely dislike calls.

The application of both criteria resulted in the final selection of birds.

*Version 1.6: Dec 17, 2008 4:31 pm -0600

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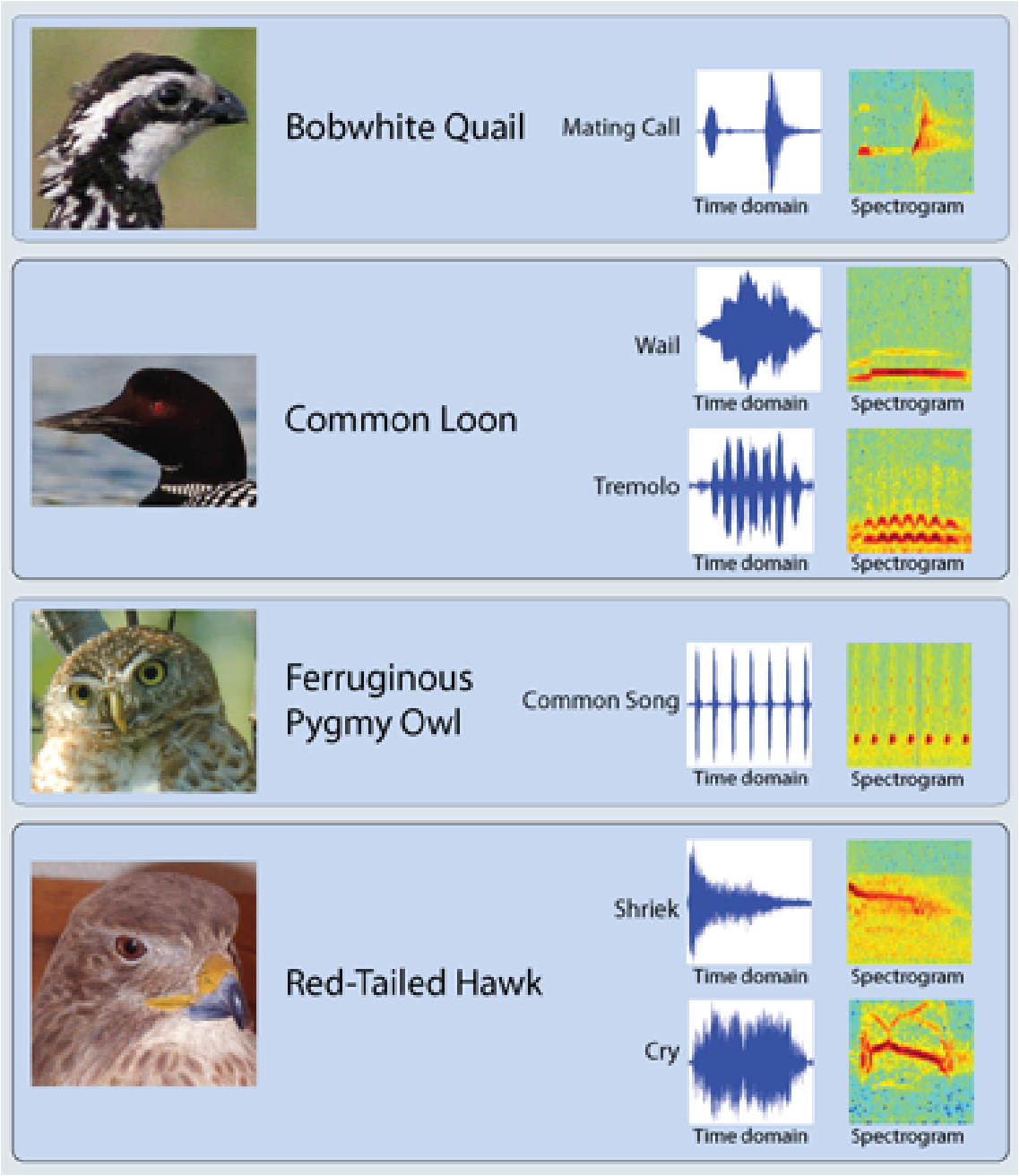
Bobwhite Quail
Mating Call
Time domain
Spectrogram
Common Loon
Wail
Time domain
Spectrogram
Tremolo
Time domain
Spectrogram
Ferruginous Pygmy Owl
Common Song
Time domain
Spectrogram
Red-Tailed Hawk
Shriek
Time domain
Spectrogram
Cry
Time domain
Spectrogram