ANIMAL SOUND RECORDING AND CITIZEN SCIENCE APPLICATIONS

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Biological observation data, if not gathered by a professional biologist, needs often verifying and validating. In order to identify which species was observed by citizen scientist, some additional information is needed - description of observed animal or plant, accompanying photo or sound recording, exact date, time and location of observation. Mobile applications for nature observations will allow automatically record the date, time and location. Most of these mobile applications also allow to take photo of a subject and add it as a proof of species occurrence which also helps to identify the object later. Using mobile phone photos for identification is suitable for plants, amphibians, reptiles and bigger insects, but not so good for animals which are too far away by the moment of observation or which are not easily tracked down for taking a photo. For birds, frogs and toads and many insects the sound recording of animal is often as helpful for identification as a photo or even better.

Mobile application "My naturesound" and PlutoF workbench for managing observations

University of Tartu Natural History Museum together with Estonian Natural History Museum developed an application for nature observations which allows to record sounds of animals, save them together with taxon observation data and link them to PlutoF database and integrated workbench.

Application "Minu loodusheli" (My naturesound) allows to record sounds, add coordinates from phone GPS, add taxon name and also a photo. All observations by user and also observations by other users are displayed on the map. Observation data will be then synchronized with user data in server and after upload it is available for editing in PlutoF workbench.

For public release of this information on webpages and portals the citizen scientist observations will be reviewed and if necessary, the identification will be corrected or added in PlutoF workbench. Moderators can also exchange messages with citizen scientists and request more details to verify the observation, if needed.
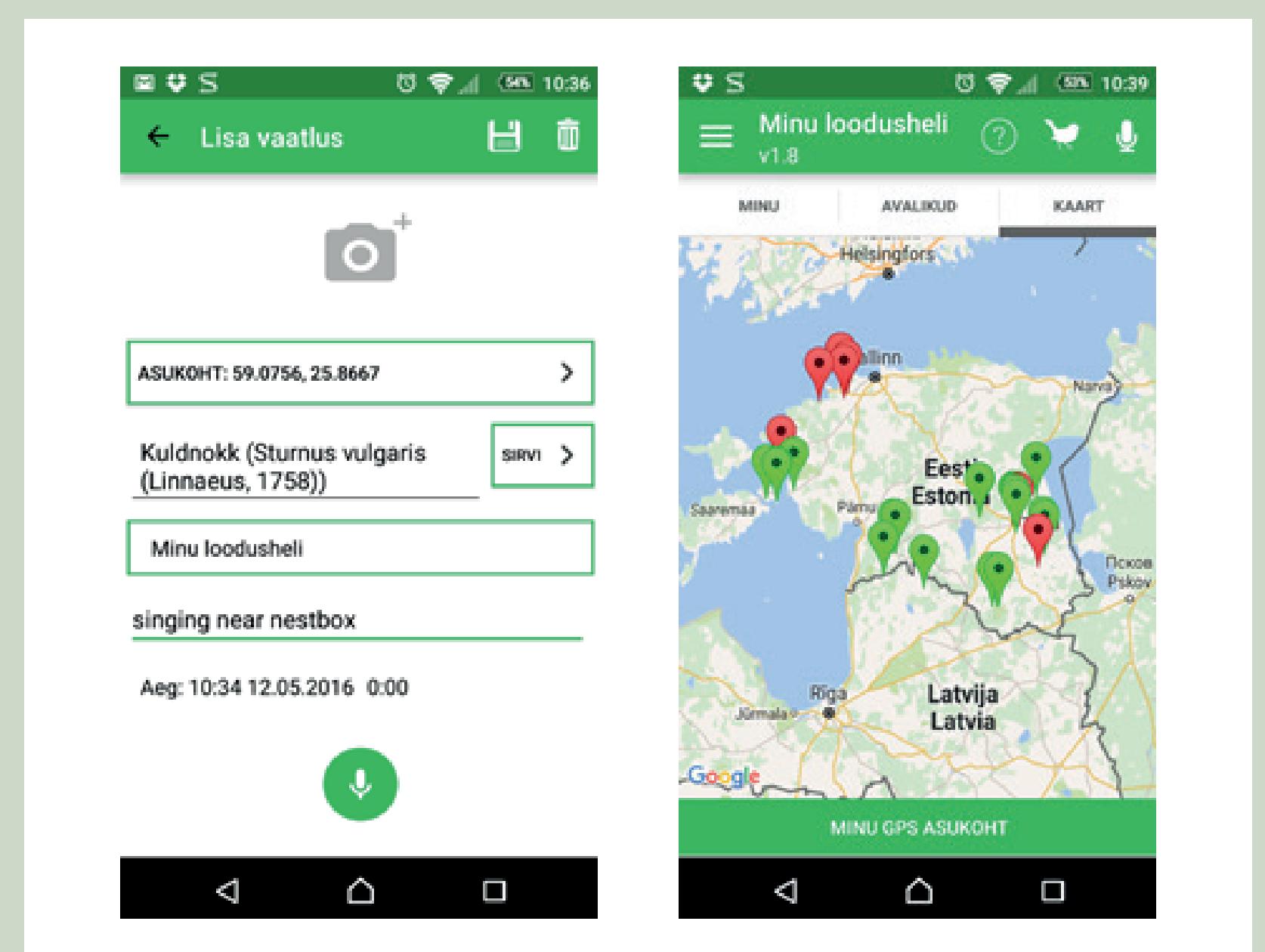
Although sound recording capabilities of mobile phones are limited and quality could be better, recordings are satisfactory in most cases for bird identification. The same applies for amphibians, cicadas and other animal groups. While the limited sampling rate and compression may limit recording capabilities for orthopteran species (grasshoppers, bushcrickets), in many cases it is still possible to use phones for recording these high-pitched sounds.

Sound recordings are also helpful for recording subjects, which were not in direct interest of observer. In background of a recording very often several other species can be identified.
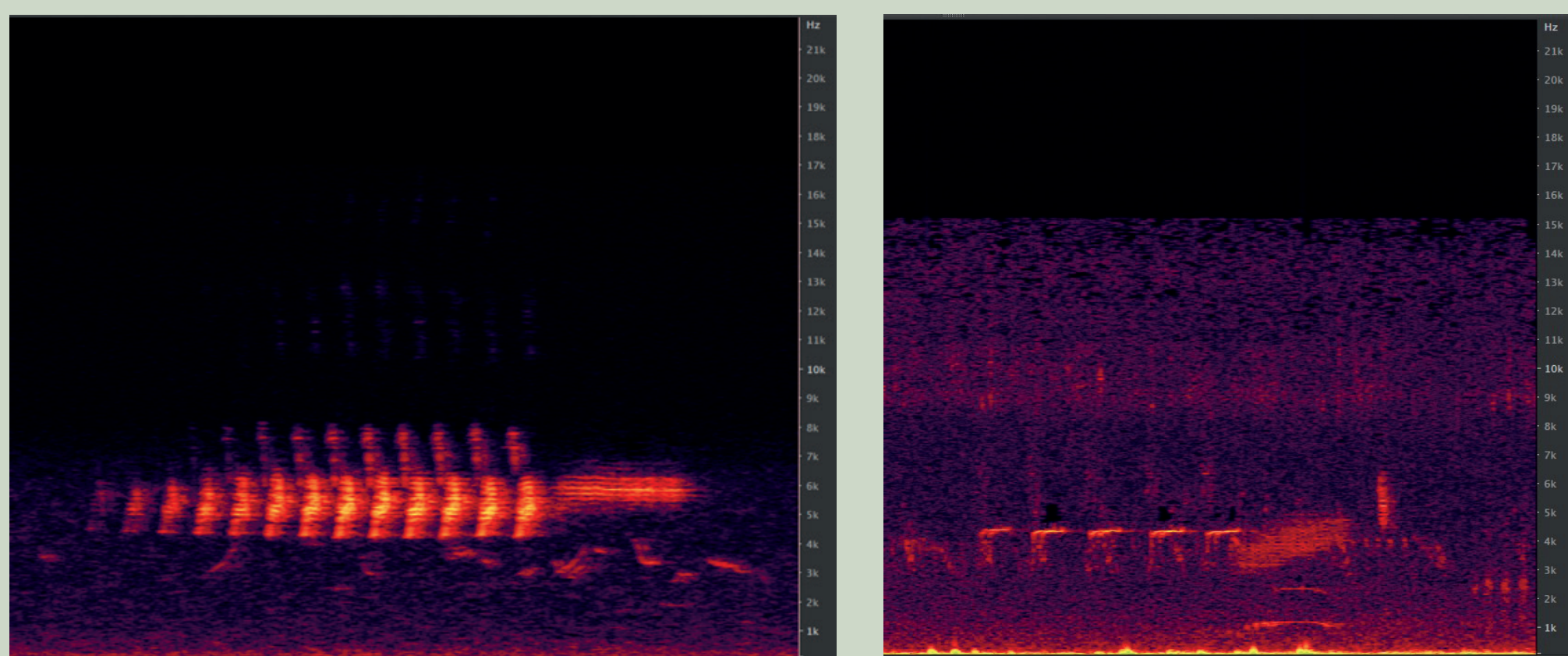
The recording of Yellowhammer is detailed enough to allow identify dialects

In this recording four different species of birds can be identified.

Citizen science project module

Using PlutoF workbench users can design their own citizen science projects and connect mobile application "My naturesound" to that project. So the contributing citizen scientists can send their observations and sound recordings directly to the project and project manager can access the data, using PlutoF workbench. This module will also allow to publish a project webpage, so all the data from contributors will be accessible in internet.

PlutoF

PlutoF workbench

Create, manage, share, analyse and publish biology-related databases and projects

http://plutof.ut.ee

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