Immersing yourself into the acoustic environment – "Soundscapes"

"A soundscape is a sound or combination of sounds that forms or arises from an immersive environment." (Wikipedia 2009)

Just stop for a moment and listen. Shut your eyes and open your ears. What can you hear? I expect if you are reading this in the department office or classroom there is a cacophony of different sounds and noises. I also expect the majority are produced by people, their activities or the machines that they are using; some quiet, some loud; some pleasant, some offensive; some noises that appear and then disappear.

Sound is normally a component of the environment that we take for granted, yet all the time the sound world is changing. Although we have a well-used geographical language to describe the visual appearance of environments, we are often less confident when describing the landscapes of sound. And yet sounds are an important tool that can be used to investigate a 'deeper' representation of place.   This piece explores some of the ways in which people, landscapes and processes can be investigated through the fieldwork medium of sound and noise.

For starters - the importance of sound

Soundscapes can be urban, rural, natural or human-centred. Although we may take noise and sounds for granted, they in fact often underpin the characteristics of particular landscapes. Without these associated noises the landscape would somehow be incomplete. So these 'collective voices' which make up the landscape are as important as the visual markers which help us to identify place.

There is an excellent audio map of the world available from the BBC World Service website.

Figure 1: Save our Sounds! The Sounds Diary from the BBC World Service.

Here users can explore this 'snapshot of the world in sound' and there is some fascinating diversity. The website could be used to introduce a basic classification of sounds based on their origins (get the students to work in small groups). This classification is important in the context of fieldwork as it can be used to help 'quantify' a soundscape, i.e. what proportions of sounds are *biophony*, *geophony* and *anthrophony*.

Classification	Examples
Biophony	*Related to ecology / ecosystems*: e.g. sound of trees moving in wind, sound of birds, sounds from animals etc.
Geophony	*Related to physical environment:* e.g. running water, crashing waves, sound of wind, rain / precipitation etc.
Anthrophony	*Related to people and their activities*: e.g. cars / planes / trains, farm and other machinery, wind round buildings, footsteps, breathing, talking, music, phones etc.

Table 1: A sound classification.

Application in geographical fieldwork

Recording of the soundscape can be used with a range of other fieldwork approaches as a way to help describe the more qualitative or aesthetic representation of places. It may be particularly valuable when making comparisons between places, e.g. beach resort vs. rural coastal strip, or town vs. urban fringe vs. rural vs. remote rural. Soundscapes may also help to reveal how places change over time, for example day vs. eve vs. night or high and low season, summer, winter, spring etc. This can be particularly useful when exploring the local school grounds or a small park.

A big advantage with this type of sound fieldwork is that it requires limited equipment or expertise. All that is needed is a willingness to observe, participate and engage; although you and the students will have to be prepared to try new techniques and approaches. Most important, however is the ability to actively 'listen', rather than to just passively 'hear'. You will have to support students in their ability to unpack and synthesise the auditory complexities of both natural and built environments. And remember that soundscape recording can be about recording the nature of the **sound(s) itself**, or perhaps more importantly an **interpretation of the geography of the sound**.

So first of all it becomes important to record the key characteristics of sounds - in a kind of 'sound taxonomy'. Figure 2 tries to illustrate this idea, describing sounds in terms of: origin / location, loudness, pitch, duration, rate of change and attack / decay. Not all these variables can or should be recorded as a routine element of describing places through their sound, but it does give some idea of the scope and possibilities.
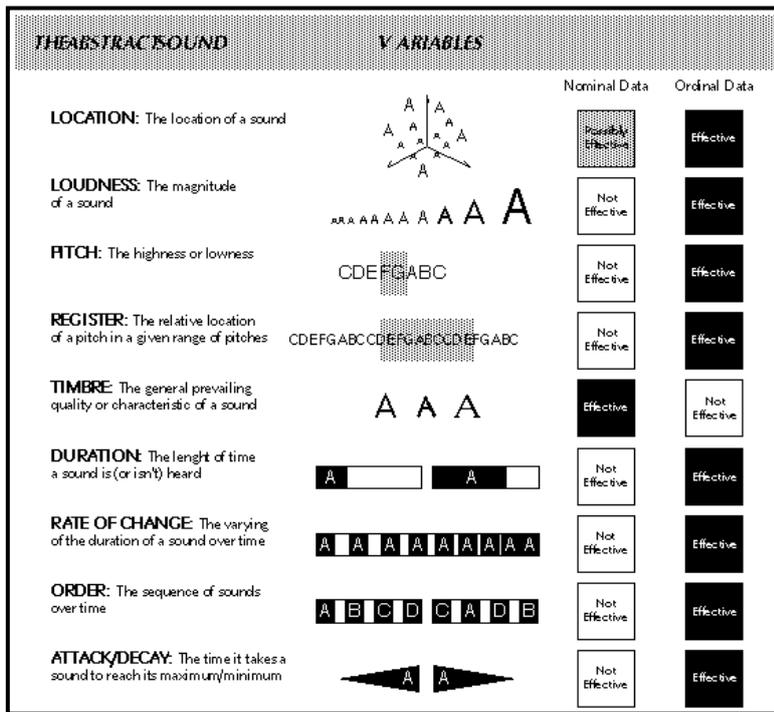
Figure 2: Sound characteristics – adapted from Making Maps.net

Figure 3 illustrates the idea of a sound spectrum or image, again based on categories and interpretations of noise. This can be used as an initial exercise (e.g. homework) to get students' used to some recording techniques and the classification of different levels of noise.
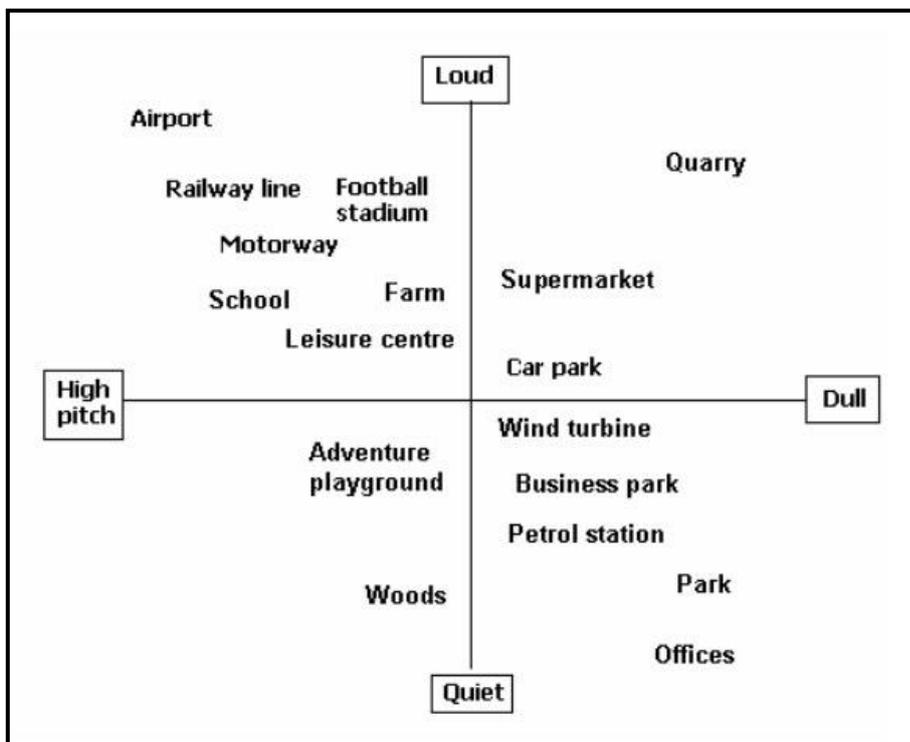

Figure 3: An example sound 'image', whereby noise has been classified according to one of four categories: loud, dull, quiet, high-pitch.

Below are some 'pick and mix' ideas for fieldwork. They start very straightforwardly and gradually become slightly more involved and requiring more skills / equipment / set-up. In this respect they could be differentiated according to age, ability or experience.

EXAMPLE ONE: VERY EASY - **Making a qualitative personal sound map**.
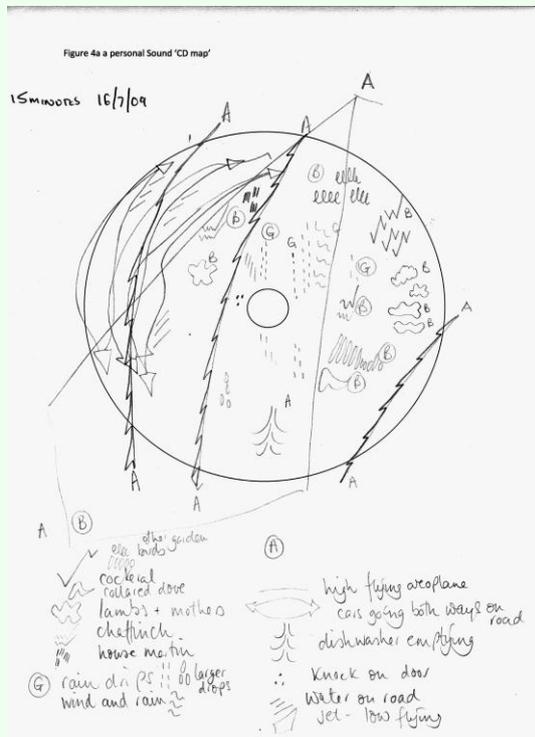

Figure 4a - an example of a 'sound CD' map from a rural part of Somerset.

Figure 4b - an accompanying GIS web-based map showing the location from which the sound CD was taken (Source: Where's the path?).

How to make a sound CD:

a) Find a comfortable spot to sit outdoors. Try to pick a location with an uninterrupted 360˚ 'sound vista'.

b) Mark an "X" in the centre of the paper which contains a circle about the same size as a CD. This shows your relative location on the map.

c) Close your eyes and listen for at least one minute. Listen for sounds from animals, birds, people, machinery and other human activities.

d) Keep listening, but now draw pictures or symbols on the map representing all the sounds you hear, and where they are coming from. It is also possible to reflect the relative distances of the sounds by using the periphery of the page as a scale. Sounds that seem close should be near the 'X', whereas distant sounds should be represented on the outside of the page.

The basic qualitative approach can be made more objective through the introduction of quantitative data, for example by using a compass to record sound direction and or a semi-quantitative sound scale as in Figure 5. Alternatively, a sound meter can be used to record the volume of particular noises.
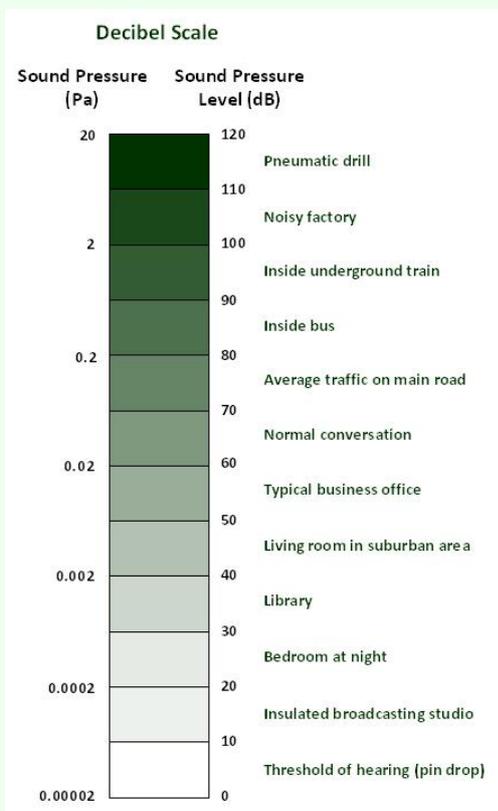
Decibel Scale

Sound Pressure (Pa)	Sound Pressure Level (dB)	
20	120	
	110	Pneumatic drill
2	100	Noisy factory
	90	Inside underground train
0.2	80	Inside bus
	70	Average traffic on main road
0.02	60	Normal conversation
	50	Typical business office
0.002	40	Living room in suburban area
	30	Library
0.0002	20	Bedroom at night
	10	Insulated broadcasting studio
0.00002	0	Threshold of hearing (pin drop)

Figure 5: An example of a sound scale.

This idea can be further developed so that sounds are classified into different groups according to Table 1.

EXAMPLE TWO: EASY - Making a sound journal.

A '**Sound journal**' is an informal record of conscious listening experiences that are strongly connected with place.   Simple notes can be taken in the form of a journal or diary record. These can then be formalised and added to photos for instance, to help to describe the atmosphere of places.
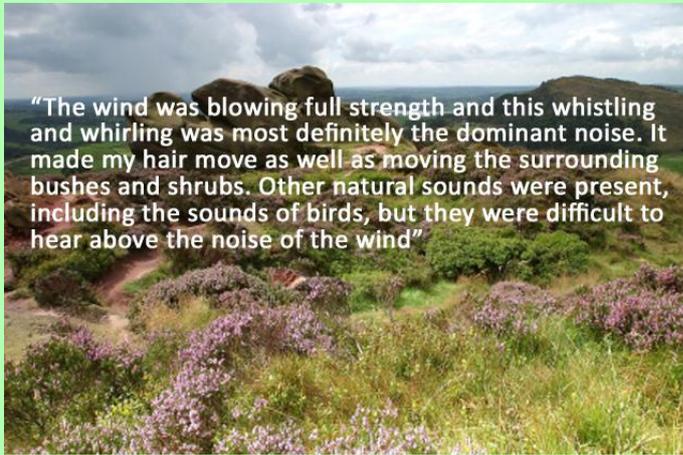

Figure 6 – An example extract from a sound journal created during a field visit.

Linked to this idea can be the creation of oral histories which can help describe people and places. Oral histories can capture aspects of life which are informal and unwritten and which would otherwise disappear without trace. Students just need to find someone with an interesting story to tell, who is willing to be interviewed by them and to allow the interview to be recorded. Often relatives are happy to do this. These again can be used in part to help add atmosphere to a place and its human history.

EXAMPLE THREE: BASIC INTERMEDIATE – An acoustic information survey.

This approach is more numerically based, and sounds are classified according to type and duration (i.e. how many seconds). It is then possible to work out the proportions of different types of sounds (Table 1) that are representative for that area. More details can be found on the Cardiff University Auditory Archaeology website from which an Excel spreadsheet can be downloaded for data collection – although this is rather more sophisticated.

EXAMPLE FOUR: INTERMEDIATE – A sound transect or sound walk.

This example uses the concept of a **sound transect** or **sound walk** using mp3 audio mapping. The idea is based on a systematic or regular survey technique whereby sounds and noises are recorded. The fieldwork can be developed to create a systematic (regular) sound map using photos and video recordings to create a more complex sound map. This would work best with a larger team of people who are able to cover a greater number of systematic / regular points in a survey area.

EXAMPLE FIVE: HARDER INTERMEDIATE – A sound portrait.

Sound portraits can be used to create and audio 2-3 minute sound representations and descriptions of places and communities. Noises and sounds can be recorded using a mobile phone and then 'mixed' on a computer (use Audacity (Figure 8) to give an acoustic image).
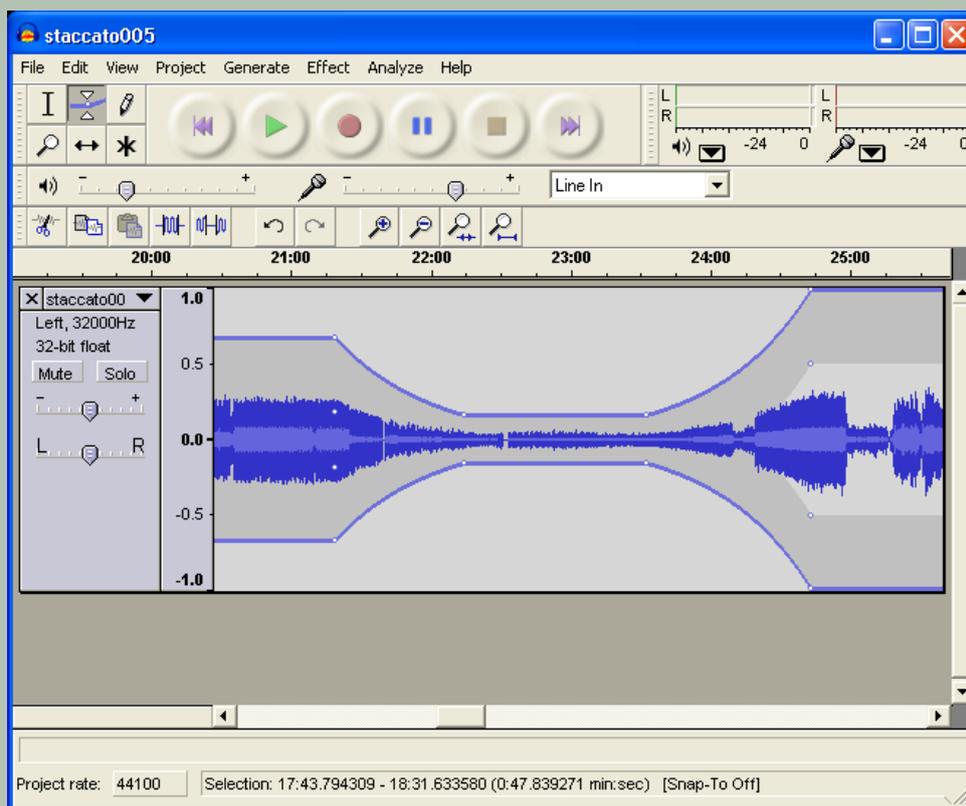

Figure 7 – A screengrab of the Audacity website.

There is more information on the idea of sound portraits available on the NPR website. This approach is a good way of piecing together the three different types of sounds that were discussed at the beginning of the article.

Sounds fieldwork – what to look out for

Whilst there may be equipment worries and uncertainties of approach, another thing to bear in mind when undertaking sounds fieldwork is the potential difficulty of presenting and analysing the data. Remember, the idea of soundscapes is to give 'deeper' additional information about place so that this work is intended to *compliment other data* that has already been collected in an area. Soundscapes are inevitably more personal interpretations so comparisons between different areas can be difficult unless the same person or groups are making the judgements. The techniques described here at the very least can be used to supplement visual information from photos and sketches, as well as field notes and sketches. It is also easy to share mp3 files electronically, e.g. via a school or group intranet. It is also possible for students to make their own digital sound maps, e.g. by using Google maps.

References and further reading

An example sound map of the Hudson River

Mediascape: a multimedia experience which uses GPS technology to input sounds, images and video into a map. These are automatically revealed as the user moves around the map.

BBC World Service 'Save our Sounds Campaign' includes an excellent interactive map.

Favourite Manchester Sounds website

Positive Soundcapes website

Krause, B.L. 2002. *Wild Soundscapes: Discovering the voice of the natural world*. Berkeley: Wilderness Press.

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