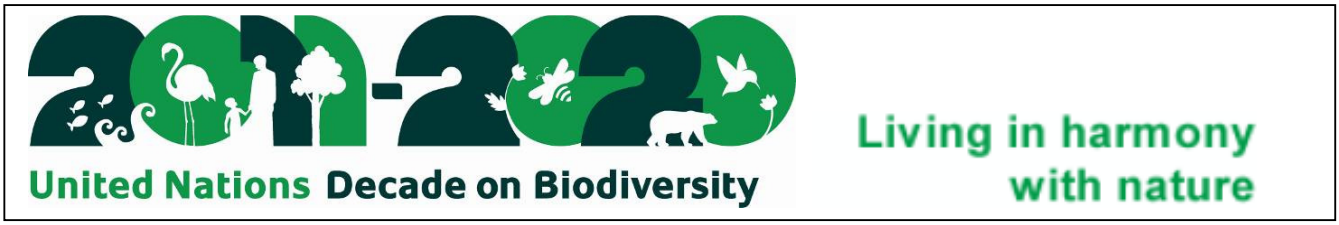
Out your window!

What do you think of using 'out your window' as a focus for biodiversity education? I suspect you won't think much of this content! Does it have a 'low apparent value' for biodiversity education from your perspective? So let's explore it and see if there is value in it for children.

First, let's start with where you fit at 'your window'. Taking the full definition of ecosystem and biodiversity education (eg IUCN, 2013) which includes humans - you are a part of this environment and its ecosystem. How aware are you of your local environment? What living things share it with you? How do they interact? What might you do to support them and put into this place the United Nations Decade of Biodiversity (UNDB) goal of humanity '*living in harmony with Nature*'?



As an introduction, try this exercise. It can be used with students too.

- Look out your window.
- Observe by sight and listening.
- Make notes of what you see, lists of living things and what they do
- Draw or take photos as recordings
- Observe what living things do.
- Identify species with names, habitat, food, etc.
- Repeat frequently until you think you know what lives where you are!

What value has this for biodiversity education?

- Did you find more diversity than you assumed?
- Did you develop new skills for noticing details of living things and researching them?
- Did you see yourself as part of the environment and its ecosystem?
- Did you expand your view of biodiversity education past the food webs, to habitat, and caring about what is out there?
- Did doing this raise the value you hold on what is out your window?

It seems to me that there is always more to learn about what is close by, if we take the time to notice, to be a part of it. It helps us to care, and to act. That would seem to me to be the target of biodiversity education, its contribution to the slogan *living in harmony with nature* (UNBD, 2011).

Noticing 'out there'

I've looked out my window for 20 years, but there was still more for me to learn about biodiversity this summer. I'll share it with you via the photo below. What do you notice in it?

Out the window, I often hear birds twittering and wind in the Bulokes. Sometimes, I see some birds fly past or perch on tree branches. I have a couple of hardy lilies that are flowering. A week of 40C+ was predicted. What might you do, or have done, in this environment to support the ecosystem and its biodiversity? Well yes, I set up this temporary birdbath. I didn't expect it to have much impact. But I was wrong and I learnt things about our biodiversity and bird behaviour in very hot weather as a result.

What was there to learn?

observation or action	ecosystem interaction notes
a run of 40C + days, farm surface water gone, action - I set up this bird bath out my window,	hydrosphere – last of the dam water evaporated, human action - provide alternative water source
site in the shade (notice shade in photo)	Biosphere - trees provides shade - cooler places
terrestrial species visit birdbath	hydrosphere affects biosphere – no aquatic birds visit our farmlands this summer
On the first day, the Magpies ruled! Other species waited for them to leave before coming for a drink - I set up 3 more water points.	biosphere – Magpies territorial, dominant in the bird bath world with Eastern Rosellas, Musk Parrots, Galahs, Noisy Miners and Butcherbird.
By the third 44C+ day, the birds were sharing the main bath (notice 3 species in photo).	biosphere - Magpies get hot! And relax! Let other species in! Often 2-4 species together
42C was the trigger point for birds to come and stay close to this bath, above in the nearby trees, or under the house.	infrastructure affects biosphere - under my house is a refuge for birdlife, especially the Magpies and Noisy Miners, but not parrots
At 42C+, birds beaks stay open and hearts visibly beat, as they pop back and forth to water.	Atmosphere affects biosphere- (notice the open bird beaks in the photo), congregation of birds
My dry garden is pecked by the birds, especially when it is cooler (notice the brown in the photo)	Biosphere –Buloke seeds are easy pickings for birds on the dry ground - food close to water
So many birds came in: about 20 Magpies one day, flying out to trees further out on the farm.	Hydrosphere supporting Biosphere – water 5 m out my window, birds from 10's to 100s meters away, putting it into its larger ecosystem context.

When you use a familiar place repeatedly, the living things in the environment and their interactions within their ecosystem become easy to recognize. When a change occurs that you as human might be able to help with, you can do so. It's a simple way to live in harmony with local Nature. So I suggest that 'out your window' could be an ecosystem of low apparent value for biodiversity education – until you really look at it and notice what you can learn from, and do, in it.

Drawing for recording

While this can be a long-term exercise in biodiversity education, practically-speaking, something quicker is needed to notice what is local. Another way is needed to help students to notice the environment and ecosystem they are part of. Try a 'backyard'/local field trip.

Take students to a 'backyard' vantage point, where they can draw what they see, as a Scientist, not an artist. If needed, instruct to put the horizon in first, then fill in with the big things and from there to smaller. Then add details noticed. Do one too, at the same time. This exercise is a valuable one, not only from the point of view of learning about local biodiversity, its environment and basis of its ecosystem, but also for the confidence it can build in students about ways to record information.

When finished, share the drawings. Compare what has been noticed in common and unique details. But do this, by introducing the main spheres of any environment – use the big names (atmosphere, hydrosphere, lithosphere, biosphere, infrastructure) or common ones (air, water, land, living things, 'man-made') doesn't matter, the concepts do. Emphasize these as a checklist for noticing what is in an environment, and their links for what makes up an ecosystem.

An example of this *Drawing for recording science* can be seen at my website in the 4learning section http://enviroed4all.com.au/4-learning/drawing-for-recording-science/ .

Ask students to report how some things in their drawings are linked. Hopefully they will know that a tree needs land to have its roots

in, rain to go into the ground for the tree to draw up its roots to the leaves, sunlight to stimulate photosynthesis in the leaves, and bees to pollinate its flowers. Sharing Nature's '*Build a Tree'* Activity (Cornell, 1989, pp62-65) is an active group model demonstrating this.

If you can do that in a familiar place and develop deeper understanding of its environment with its biodiversity linked in its ecosystem that will be transferable to other and to less familiar places. Now, ask students to repeat this drawing observation activity at home with any view they choose. Rural children will then report on farmlands. Urban children might discover their backyard or local park. What they bring back can provide raw material for further biodiversity education and hopefully learning some action for them to contribute to living in harmony with nature.

Audits

There are many ways to take an inventory of your surroundings. This contribution to biodiversity education is at the simpler but necessary level of detailing the species. An informal audit for a garden 'wander' is found in *Biodiversity in your garden* and *Biodiversity - building skills by garden investigations* (Clark, 2010). Greening Australia (GA, 2013) has a formal and extensive *Biodiversity Audit Pack* for schools, including the Biodiversity module of Resource Smart Aussie Vic.

Why count things in biodiversity education – making biodiversity audits? Well, if you don't take account of what is in an environment, how will you really know it? Will you become aware of all its linkages? Will you be really able to understand how its ecosystem works? Will you know if your caring actions, help?

Repeated observations

Another advantage of going 'out the window' is that the observations can be repeated over time. This is important to develop an understanding of the presence of biodiversity species and interactions within the ecosystem as it changes over the seasons.

It can also allow an eclectic recording of interesting things that take place to encourage engagement with the ecosystem, the discovery of personal values and the attitude of caring. An example of the eclectic learning is the discovery of the way seven species of my local birds behaved when the temperature reaches 42C, and what I can do to help them.

Repeated audits can also be a part of this. However the need to keep accurate data recording, may distract from the enjoyment of the unexpected discovery in biodiversity. Using the ecosystem 'out the window' makes it easier to notice occasional happenings, while keeping an audit at other times if desired.

Going 'out the window' does have much to offer in biodiversity education. The environment that is there is part of an ecosystem, may have been one to which people passively belonged. Taking notice of it, could move people into belonging actively. As a result of noticing details and often unplanned learning over time, personal interest in and commitment to the biodiversity there may develop. Actions may follow for the good of the biodiversity, contributing to living in harmony with nature. If everyone did that where they were, what kind of a combined effect would it have on our global biodiversity?

References

Clark, Jeanie (2010) '*Biodiversity in your garden'* on the web at http://enviroed4all.com.au/wp-content/uploads/2012/05/Biodiversity_in_our_garden1.pdf ;

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GA (2013) *Biodiversity audit pack* found at http://www.greeningaustralia.org.au/uploads/Our%20Services%20-%20Toolkit%20pdfs/VIC_6_audit_pack_JM.pdf

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All websites used between Feb 10-17 2014