Improving school grounds for biodiversity and education
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It has long been recognised that access to a stimulating outdoor environment can have a significant positive impact on pupil behaviour, development and learning. Research drawn together in the RSPB’s report Every Child Outdoors (2010) and the National Trust’s Natural Childhood report (2012) highlight the diverse benefits for children of contact with nature and outdoor experiences. These benefits include positive impacts on education, physical health, emotional wellbeing and personal and social skills, including the development of environmentally responsible citizens.

In Wales, the introduction of the Foundation Phase, the promotion of Education for Sustainable Development and Global Citizenship (ESDGC) and the re-emergence of a more experiential approach to learning at all levels have placed the outdoor classroom at the centre of educational theory and practice at all stages of education.

The Foundation Phase in particular promotes a holistic, experiential and skills focussed approach to teaching and learning - integral to this is a stimulating and interesting outdoor space.

"The Foundation Phase environment should promote discovery and independence and a greater emphasis on using the outdoor environment as a resource for children’s learning."

Framework for Children’s Learning for 3 to 7-year-olds in Wales (2008)

The Eco Schools programme, Forest Schools and Healthy Schools initiatives have all contributed to a renewed focus on the outdoor environment throughout the whole education system. Schools now have a certain amount of pressure on them to develop their grounds to support the various curriculums and initiatives that they are involved in, and recent years have seen a surge in schools grounds development and outdoor education in general.

This report explains the processes and mechanisms that Newport City Council put in place in order to deliver the additional requirements of the curriculum and address the increased interest in the outdoor environment and the educational benefits it can bring.

Developing the Newport Model

Assisting with the delivery of environmental education had for a number of years been on an ad hoc basis throughout Newport City Council. Service areas such as Grounds and Countryside had a broad remit for environmental education and awareness raising, however, this was not part of a formal Service Level Agreement (SLA) with Education. Prior to 2007, a number of schools in Newport had requested nature gardens within their grounds, and a small number of these had been delivered by the Countryside Team using Countryside Council for Wales (CCW) grant funding. However it was clear that at a time when schools really needed assistance with developing the potential of their grounds, there were limited resources to help them deliver this.

As a result of this, individual schools were trying to develop their grounds independently, very often unsure about what they wanted and how to do it to make the best use of their available grounds. There were also numerous reports of meadows and young saplings mown down by maintenance teams after schools created areas themselves but didn’t inform the right people. This lack of communication between schools and their maintenance teams led to problems such as a site being inadvertently restricted for certain machinery or installation creating a lot of unnecessary maintenance work and increased costs. It was also common for areas and projects to fail once key members of staff were lost.
Due to all the various elements driving schools to enhance their school grounds, CCW requested a new approach. Newport City Council (NCC) reviewed how best this could be delivered across the authority at sites with different constraints. Newport’s Countryside Services recognised the need for a more cohesive approach, and the need for expertise to be provided to schools. They developed a new project in late 2007/early 2008, with a focus on increasing biodiversity, and expanding on the existing links made with Education during the creation of the nature gardens.

The idea was approved by CCW and then discussed with NCC’s Grounds Maintenance and Education Advisory Service, as well as Newport’s teachers. Initial concern over changes in current maintenance programmes, the unsustainable nature of previous projects and queries over why change something which is working gradually diminished. All parties could see the benefit of looking at the whole school grounds and using them as a wildlife and education resource.

Ultimately, the appointment of a Biodiversity in Schools Officer was proposed as the most effective way to support schools to;

- **Increase the biodiversity of their grounds, and;**
- **Make best use of their grounds to assist in the delivery of the environmental aspects of the formal and informal curriculum**

These aims would be fulfilled by the Biodiversity in Schools Officer being a single point of contact for the schools, and working in conjunction with the School Advisory Service, Countryside Services and Grounds Maintenance. A Council cross-service delivery was required for the project to be successful.

In 2008/09 Newport City Council’s Countryside Service undertook a pilot study to formalise an approach to improve school grounds for biodiversity - the Biodiversity in Schools project. This was included in their 4-year Framework Grant from CCW. A pilot Biodiversity in Schools project began in April 2008 and was run by one of the biodiversity officers as a part time programme (1 ½ days per week). The cost of the pilot was funded 50% through NCC’s Countryside Service and 50% by CCW as part of Year 1 of the Framework Grant. The total cost for the pilot year was £12,000, this included staff time and implementation, a part of which was match grant funding.
The four pilot schools chosen with the help of the Science Advisory Teacher (a key lead in the development of the project) were:

- Llanmartin Primary School
- Millbrook Primary School
- St Patrick’s RC Primary School
- St Woolos Primary School

Both Llanmartin Primary and Millbrook Primary Schools are on the outskirts of Newport City Centre and have large grounds with extensive grass areas. St Patrick’s RC Primary and St Woolos Primary Schools are in the City Centre and have small grounds dominated by hard play surfaces and high boundary walls.

These were chosen in order to test whether the Biodiversity in Schools Project can improve the biodiversity and educational opportunities of school grounds, regardless of the size, condition and location of the school.

Building nest boxes with volunteers from Gwent Wildlife Trust at St Woolos Primary School.
Each pilot area was assessed for its existing biodiversity, and opportunities and challenges to the enhancement of biodiversity in each location. The biodiversity officer liaised with teachers, parents and children within the pilot Schools to identify opportunities and constraints and create a realistic list of potential works. Following this some of the more challenging work was undertaken by contractors - e.g. removal of bitumen macadam surfacing. Other tasks were undertaken by grounds maintenance teams or by pupils where appropriate i.e. planting whips.

Over the year 2008/9, the pilot project was successful in increasing the biodiversity of the pilot school grounds by planting native hedgerows, creating living willow structures, sowing wildflower meadows and making nest boxes. The post also helped facilitate installations of log circles for use as an outdoor classroom or Forest School, and raised beds for vegetable growing.

The pilot project was successful in creating a good working relationship with the lead teachers in each of the schools and in implementing projects on the ground. Good communication between the school and the contractors, or the school and Grounds Maintenance was noted as being paramount. The role of the Biodiversity in Schools Officer was highlighted as being important in these situations, acting as an intermediary and enabling the schools requirements to be interpreted correctly.

St Woolos Primary School is one of Newport’s old, Victorian red brick schools with the traditional drill yard and a few token shrubs. In December 2008 tarmac was removed and the area was landscaped. Low grade soil was brought in and a log ‘circle’ was donated and installed. Woodchip was laid around the log circle and wildflower seed sown on the bare soil.
The conclusion of the pilot project was that regardless of the size or location of the school and their grounds, the biodiversity and educational value of all school grounds could be improved, and at a minimum cost.

The success of the pilot project led to the decision to create a full time Biodiversity in Schools Officer post for Years 2, 3 and 4 of the CCW Framework Grant (2009 - 2012), rolling out the scheme to all 62 schools in Newport.
Reaching the schools

A report on the pilot study findings and the proposals for the next steps was produced for the Newport Heads Forum in November 2008 (available online). The Forum voted unanimously to carry the project forward and to seek the agreement of all other Schools.

Support and Promotion

At this stage the Science Advisory Officer at the time played a key role in promoting the new service and contacting schools with details of the new SLA. Head teachers knew the Advisory Officer and trusted her opinion, and it was extremely helpful to have a ‘champion’ for the project who was already well known and trusted in all the Newport schools. She was able to take the time to go and see head teachers individually to present the SLA and explain the project further.

The SLA was also discussed at all Governors meetings as the document requires the signature of the Chair of Governors as well as the head teacher.

Schools began to indicate their commitment to the scheme, and by April 2009 enough schools were willing to commit to enable the scheme to be run. A Cabinet Report was written for the Creation of Biodiversity in Schools Officer (available online) to ask for approval to create the post.

The post within the Council

The Biodiversity in Schools Officer post could have sat in a number of places within the Council, allowing it to be quite flexible and interact with other departments (e.g. Grounds Maintenance, Countryside Services or Education Service). It was decided that for Newport, the best decision was for the post to sit in the Countryside Services, ensuring that the biodiversity focus of the role was not lost and that the project could contribute to biodiversity targets. As such, the Biodiversity in Schools Officer is located within the Green Services in the Streetscene Service Area (formally Grounds and Countryside Services).

The Finances

The Biodiversity in Schools Project is part funded through the 4 year Framework Grant from the Countryside Council for Wales (CCW) obtained by Newport City Council’s Countryside Services (now Green Services).

In years 2, 3 and 4 of the Framework Grant, CCW provided 50% of the total anticipated costs of the post (£28 - £31,000 which included salary, on-costs and a small budget). The remaining 50% of the total cost was secured through offering schools the option to sign up to the project in the form of a 3-year Service Level Agreement (SLA). The option was offered to all schools, from nursery to secondary, regardless of whether they were in the Council’s Grounds Maintenance agreement or with an outside contractor. The SLA was set at £300 per school per year for 2009-2012. In order to match the grant from CCW, 46 schools had to sign up to the SLA. In the event, 58 of Newport’s 61 schools signed up.
At the start of the project a Flow Chart was created to assist the implementation process and help the Officer to separate the different stages of the project:

**Biodiversity in Schools: Flow Chart of Processes**

**STAGE 1**

1. **Liaison with Science Advisory Teacher & grounds maintenance**
   - Letters out to schools
   - Visit school
     - Establish Key Contact at School
     - Check SLA is in place
   - Walk Grounds
     - Collect ideas/suggestions
     - Note ecological evaluation
   - Collate Ideas
     - Talk to Education re: land disposal
     - Consider viability and biodiversity benefit
     - Refer ‘rogue’ ideas back to Grounds/Building Maintenance e.g. requests for benches, drainage problems etc.
   - Priorities

2. **Plan of Works**
   - Document issued to school on return visit
     - Includes project summary and way forward
     - Cost estimates

3. **Input from grounds maintenance**
   - Introduction/Project background
   - Explain Officer’s remit
   - Process summary
   - Budget availability
   - Potential funding
   - Action plan sheet
   - Ongoing - ‘Grounds Handbook’ or similar

4. **Discussion/Agreement with Education**
   - Check plans with Science Advisory Teacher

5. **Check plans with Education Planning & Building Managers**
   - Oversee works on ground
   - Biodiversity issues
   - GM liaison
   - Eco Clubs, staff meetings
   - Specialist advice
   - NOT lessons

6. **Internal and external grounds maintenance manager and technical officer.**
   - Chargehands responsible for each school
   - Consider GM budgets
The Finances and Implementation

STAGE 2

**Present scheme to school**

Revision of plans following consultation

Arrange Works

Internal

Office to arrange work with Grounds Maintenance technicians and charge hands

Paid out of Countryside budget, Grounds development budget, or school

External

Officer to assist school with finding contractors and agreeing specifications

Schools generally pay direct to contractor, if applicable, Officer can pay direct or match fund

Visit during works

**Internal**

- Arrange and attend planting day/event
- Tools
- Transport if required
- Plants
- GM Staff
- Press if appropriate

**EXTERNAL**

- Ensure specification met
- Photos
- Press if applicable

Ongoing: Grounds Management

Ongoing: Grounds Management training

Completion of Works on ground

Input into Biodiversity Action Reporting System (BARS) (ongoing)

**Consider potential funding sources**

Ensure accurate specifications

**Head Staff Eco Council or combination of all 3**

Send revised plan to school

Area Managers and Chargehands:
- Change in regimes communicated
- Maintenance sheets amended/updated
- Cost consideration
- Explanations and training

Additional and maintenance works ongoing
Implementing the Project

The Biodiversity in Schools Officer made initial contact with all schools via a letter of introduction and a follow up phone call to arrange a meeting. The meeting was often with the Head teacher and another teacher, perhaps the Eco Schools co-ordinator or Forest School Leader. Often these teachers took on the role of key contact with the officer in lieu of the Head teacher. The initial meeting involved a walk over the whole site noting existing features and habitats and discussing possible additions. Sometimes the teachers knew what they wanted, other times they were completely open to ideas. Suggestions made in terms of biodiversity enhancement included tree and hedge planting, meadow creation (in the simplest form of leaving grass to grow long), native bulb planting, butterfly bed planting, living willow structures, habitat piles, bug hotels and nest boxes. Other features were also discussed to enhance the grounds in other ways, such as the installation of log circles, whether specifically for Forest School or simply as an outdoor classroom; the creation of allotment plots or raised beds for vegetable growing; obtaining compost bins and installing fencing around nature areas.

Feedback was gained from other members of staff by the lead teacher, and in some schools the Biodiversity in Schools Officer attended a staff meeting to put forward ideas and promote discussions. In many schools the Eco Club and School Council were involved in putting forward ideas for developing their grounds. Sometimes the Biodiversity in Schools Officer met with the children directly, other times the lead teacher would feed back to the Officer. It was important to be flexible with each school and to allow them to decide how they would like to proceed.

Following the initial meetings, a plan of works was drawn up by the Officer and returned to the school for checking and amending. The document gave brief detail about the project, it’s aims, and the role of the Biodiversity in Schools Officer. It also included a table with information about the proposed tasks such as cost estimates, where possible, and the seasonal timings of specific activities. Management implications were also noted. For example, some projects would require little changes in management, but some may need extra management resulting in increased charges to the school’s maintenance costs. Increased maintenance requirements such as to maintain raised beds or ponds may affect charges, or alternatively the schools could take responsibility for these.
Proposed works were also discussed with the schools maintenance contractors, whether that was the Council’s Grounds Maintenance or an external contractor. The Officer was able to discuss each project on behalf of the schools, so that the contractor could detail the practicalities and possibilities as well as what labour, funding or expertise they could offer. Where required the maintenance contractors were able to suggest more appropriate locations or alternative ways of working, but also their knowledge of the site and the maintenance regime meant that they could input some constructive comments and solutions. They would also provide quotes for the work as required, and were able to indicate whether there would be any changes to the schools maintenance charges.

The school planning and building team were also consulted on the school developments, and they were able to highlight any schools where they may have an issue with planting or habitat creations schemes from a land disposal point of view.

Following the agreement of the proposed works by various parties, the Biodiversity in Schools Officer would liaise with the school and the maintenance contractor. Wherever possible the children were involved with the projects - tree planting, butterfly garden planting, nest box making, willow planting, seed sowing etc.

The Biodiversity in Schools Officer would then ensure that any changes to maintenance regimes resulting from the works were fed back to the grounds maintenance operatives.

Throughout the project there has been regular liaison between the Biodiversity in Schools Officer and the Science Advisory Officer who was able to offer further insight into the work going on in schools, particularly for example, of up-coming inspections. On her visits to the schools she would also be looking at how the school was making use of their grounds from an education point of view, and so any suggestions that she made would be fed into the planned works as well.
Funding the work

Following the agreement of what works were required, the work was funded in a combination of ways;

Countryside budget

The high number of Newport schools paid up to the SLA resulted in the Biodiversity in Schools Officer having a small budget which was able to be used to pay for ground works, resources and other items as required (around £6,000 each year) to help schools. It also enabled the officer to make use of bulk purchasing power and to purchase at wholesale prices (for example, buying in compost bins and water butts for all schools at far cheaper prices than if the school were to buy one themselves). This was an unexpected ‘added value’ to the schools as a result of the project, as the high uptake meant that by paying £300 a year they potentially could get much more than that back.

Grounds Maintenance development works budget

Part of the Grounds Maintenance budget which is allocated to schools via the Central Education budget includes a small percentage for development works. This is available for any emergency and unexpected work that may be required, and can also be used to develop the grounds in whatever way the school wants. This budget is ideally suited for biodiversity and educational enhancements, and in many cases there was enough money in this budget to cover the costs of the work at the individual schools.

Grants or external funding

The Biodiversity in Schools Officer is able to search for grant funding on behalf of schools, and support them in applying for and obtaining the funds for developing their grounds. For example, over the three years of the project a number of schools have been successful in applying for Tesco Grants, BIG Lottery Funding and grants from banks and building societies.

School budget

The schools would also find money themselves through allocating some of their own budget to grounds development, through the PTA or ‘Friends of’ group funds, or through fundraising activities. For example, one school put money raised at their Christmas Fayre towards building some raised beds. In another, they asked for children to bring in 50p to plant a tree in the hedge around their playing field.
Fairoak Nursery School

Fairoak Nursery is a fairly large Nursery School close to the centre of the City. A number of children come from economically disadvantaged backgrounds with a number of families living in supported housing. The school building is a traditional Victorian red-brick style and they have small grounds, mostly a tarmac playground, like many old schools in the City. There is a very small square of grass and tall boundary walls. The school is in an urban environment, surrounded by houses, roads and businesses.

With the enthusiasm and imagination of the current Head teacher the grounds have been transformed into an inspiring and engaging environment for the children in the Nursery. The Biodiversity in Schools Officer encouraged them to develop further areas in the grounds, making suggestions as to a few additional features to continue their development.

In the last 3 years, they have created raised beds, a polytunnel-come-potting shed, a chicken coop complete with bantam chickens, a bird ‘hide’ and nature safari area, a bird table, feeders and nest boxes, log piles, an orchard in pots, pots of herbs, flowers and anything else you care to think of. It just shows what can be done in such a small and uninspiring place! On Saturday mornings they run a gardening club for the parents to come to with their children, and it’s proved so popular that they are often there well into the afternoon. The children now grow vegetables at home with their parents, something that many had never done before.

The nursery school also makes use of a local urban woodland, Oaklands Wood, which is about 1km from the Nursery. The Council has installed a log circle in this site and a number of other local schools use it as well. In March 2011 the Biodiversity in Schools Officer arranged for improvement works in the woodland and repaired the log circle (funded from Biodiversity in Schools Officer and Tree Officer budgets).

A few visits a year by the Biodiversity in Schools Officer is all that is needed at this school, to give a few ideas and support on using what they already have. The supply of resources is a key contribution here, such as access to ‘free’ compost bins and water butts, and the improvements to their local woodland. Any work they do in their grounds they fund themselves, or get donations from parents/teachers.

With the enthusiasm and imagination of the current Head teacher the grounds have been transformed into an inspiring and engaging environment for the children in the Nursery. The Biodiversity in Schools Officer encouraged them to develop further areas in
Millbrook Primary School

Millbrook Primary School is a medium sized school situated on the Bettws housing estate to the north western edge of Newport. The majority of the estate is social housing, and Bettws is one of Newport’s Communities First areas. Around 30% of children are entitled to free school meals - above the national and local averages. They have large grounds in excess of two acres, which comprises of a large field, grass banking, a small woodland copse and tarmac playgrounds. Bettws Brook skirts the school grounds to the north and east, and their copse area is surrounded by a wet ditch. Not far from the school is the Monmouthshire-Brecon Canal.

Millbrook Primary was one of the schools that took part in the Biodiversity in Schools pilot project, and during that first year their small copse, ‘The Dell’, was created into a Forest School. A contractor cleared some of the shrub layer and felled a small number of trees in order to create a clearing for a log circle. The log circle was created from the trees which had been felled, and the remaining timber and brash were left on site in habitat piles. The copse is located at the bottom of a steep bank off the playing field, and is surrounded by a wet ditch. Steps were created in the bank and a bridge built over the ditch to allow easy access. Additionally, the grass bank adjacent to the Forest School was allowed to grow as a meadow area, cut annually, after discussion with the Grounds Maintenance Team. The Forest School is now regularly used by groups - once a week for Forest School specifically, and at other times of the week as a general outdoor classroom. This project was funded from the Pilot project budget which was significantly higher per school than in later years (diluted between more schools).
Since the roll out of the full Biodiversity in Schools programme, they have had a number of other enhancements in their grounds. Six raised beds have been constructed for vegetable growing by Roots, part of Vision 21 - this is a social enterprise project which offers skills and training to adults with learning disabilities, and the Roots project is based at Bettws Allotments and provides horticultural and garden maintenance training. This created a really beneficial link between the school and their local community. This was funded through the Biodiversity in Schools Officer budget in Year 2. They have also had a willow structure planted – a tunnel leading into a dome, planted in March 2009. The willow was funded through the school’s grounds development budget.

The school’s ESTYN inspection report in early 2009 notes the, “the recent development of a forest school setting in the grounds significantly enhances learning opportunities”, confirming the opinion that developing school grounds plays a major role in children’s education.

Their most recent project was the creation of a bog garden by the Eco Club. They have a naturally wet area in their field (where the willow has been planted) which they wanted to make into a bog. The Biodiversity in Schools Officer met with the Eco Club to talk about the design of a bog, and we went out to decide how big they wanted it to be. The Eco Club then dug the bog themselves (a very muddy experience!) (May 2011). The Eco Club provided the labour themselves and the Biodiversity in Schools Officer funded plants for them.

Millbrook Primary have also been successful in being part of the Learning Through Landscapes (LTL) Tyfu Orchards project. Since September 2010 they have had a LTL Officer working with them to learn about apple varieties, design the orchard and to help them plant their own orchard (planting to take place early 2012). All the funding for this project has come via Learning Through Landscapes.
Langstone Primary School

Langstone Primary is a fairly large school situated in the rural ward of Langstone, an economically advantaged area, to the eastern edge of Newport. They have large grounds of over 2 acres. The grounds consist of a playing field with a sizeable amount of space surrounding it, ‘Nature’s Classroom’ which they developed with Big Lottery Funding and 2 large playgrounds. Fields and a small number of houses surround the grounds.

Over the 3 years of the Biodiversity in Schools Project they have had an active and enthusiastic Eco Committee who have taken ownership over a lot of projects in the school grounds. After discussions with the Biodiversity in Schools Officer, the Eco Co-ordinator and the Committee have sown wildflower seed to create a meadow/butterfly area in an unused sunny grassy bank; arranged for raised beds to be built - enough for one for every class; planted an orchard and sown wildflower seed on a rough bank created after the creation of a new car park. The butterfly meadow is flourishing and the orchard seems to have established very well. The raised beds are actively used by almost all classes and the children harvest and sell or eat the produce they grow. All these projects were funded by the school and most of the work was carried out by their external Grounds Maintenance Contractor.

In conjunction with the Biodiversity in Schools Officer, a native hedgerow has been planted (on a snowy day in February 2010!) and a butterfly bed has been revived (on a lovely warm day in June 2011). Both of these projects were funded from the Biodiversity in Schools Officer budget. The Officer also has an active involvement in the schools annual Eco Day - running activities in Nature's Classroom and the whole grounds including tree ID, bug hunting and wildflower ID during 2010.

Langstone Primary will be going for its platinum Eco Schools award in 2012, and there are plans to replant and revitalise the Sensory Garden in KS1 and to maintain the willow tunnel. The Eco Club are also in the process of surveying all the grounds to create a profile of the school’s biodiversity, and creating an electronic map of the grounds which is linked to the data collected.
Maesglas Primary School

Maesglas Primary is located to the south west of Newport and shares its large playing field with Maes Ebbw Special School with which they have close links. The Maesglas area is a Communities First Area of Newport and has a high degree of social disadvantage. Approximately 50% of pupils are entitled to free school meals, well above the local and national averages.

They have a large playing field to the front of the school with a smaller grass area to the rear and two tarmac playgrounds. The school is in the centre of the Maesglas estate and attracts vandalism - their grounds suffer from damage on a regular basis.

Over the last two years the school has tried developing their grounds in a number of ways. The school has no Forest School trained teachers, but a log circle has been installed to help them with their outdoor education provision. As part of this a small number of trees and shrubs were also planted, but unfortunately these did not survive the vandals. More will be planted in winter 2011/12. The log circle and tree planting was funded from the Grounds Maintenance development budget and the Biodiversity in Schools Officer budget.

In the summer term of 2011, the reception class had a mini-beast topic, and worked with the Biodiversity in Schools Officer to create a mini-beast mansion or bug palace. The staff and children collected large volumes of material to fill the palace, and the Biodiversity in Schools Officer provided the pallets and additional material. This project had no cost associated with it as all material was recycled or collected, there was only a time commitment.

The school had four raised beds built over the summer of 2011, one for each of the KS1 classes and a digging bed, and if successful more will follow for KS2. These were funded by the school’s Grounds Maintenance development work budget.
Milton Junior School

Milton Junior School is situated in the Ringland ward of Newport, on the edge of the inner-city area. The area is one of Newport’s eleven Communities First areas and has a high level of unemployment and significant socio-economic disadvantages. 46% of pupils are entitled to free school meals, well above local and national averages.

The school shares some of its site with the adjacent Infant School, but most of the grounds are used independently to each other. The Juniors have a well developed allotment area - the Dig for Victory garden developed as part of a World War II History project - and have been developing their Environmental Garden over recent years. The Environmental Garden now has a small meadow area and a bog garden along with bird feeders and nest boxes.

The bog garden was created in 2009 with the help of Dwr Cymru/Welsh Water as part of a successful collaboration project with the school. Eleven Dwr Cymru employees were involved in a Management Development Training programme, and were in need of a voluntary project which the team could deliver to complete their training. Through contact with Dwr Cymru’s Education Team, the Biodiversity in Schools Officer was invited to select a project which the Management Development trainees may like to take on. Milton Juniors had already expressed an interest in creating a wetland area in their Environmental Garden, and it was felt it would be an ideal project for the group. Dwr Cymru commented that they found it very useful having someone already in contact with the school, to be able to present the project and arrange the initial meetings with the relevant teachers.
The Dwr Cymru Team wanted to find a sustainable water source that would feed the wetland and maintain water levels throughout the year. With their range of water management and engineering skills, they designed a solution that was technically unique and practical to construct and maintain. The bog garden is fed by 3 water butts, and the water level in the bog garden is controlled by a ball valve which can be adjusted by 3 taps at different levels.

In September 2009 the Dwr Cymru Team involved the children in the project, explaining what they were doing and why, and arranged a competition for the children to choose the plants to go in the bog. The creation of the bog garden was carried out over the October half term in 2009, and the site was then left until the Spring of the following year for planting. Children were involved in the planting of the garden and the installation of an interpretation board. The Eco Club were heavily involved in learning about the bog garden and how to look after it and maintain the water levels, and now are very good at checking that the water levels are suitable.

The funding of the project was entirely by Dwr Cymru. The members of the Team arranged fundraising events and gained charitable donations of money, materials, equipment and manpower from a number of contractors to Dwr Cymru. Dwr Cymru also committed 2 days of staff time to the project for each member of the team. The photos show the development of the area over the initial 5 days, and then the planting day in Spring 2010.
Bassaleg School

Bassaleg School is a secondary school located in the Graig Ward of Newport, to the west of the City. The majority of pupils are neither from advantaged nor disadvantaged backgrounds, and only 4% are entitled to free school meals. The school has extensive grounds of over 20 acres, mostly comprising of large sports fields, but they also have a small orchard and are making some significant developments. For example, they have constructed an outdoor classroom - a log circle surrounded by a willow ‘hedge’ - which was constructed before the Biodiversity in Schools Officer was in post. The school also has a very active and enthusiastic Eco Committee and holds its second green flag.

Since the Biodiversity in Schools Officer has been in post, the school has developed a large meadow area (Grounds Maintenance budget), had 3 raised beds installed (Grounds Maintenance budget) with water butts (Biodiversity in Schools Officer budget) and developed their ‘Big Grounds Day’ to include more activities. They have also been successful in raising the funds for and installing a wind turbine on the site.

The ‘Big Grounds Day’ is an annual day arranged for Year 9, where the students are off timetable for 2 days and involved in activities focussed in their grounds. The school invites external organisations such as Gwent Wildlife Trust, Forestry Commission, Keep Wales Tidy, Welsh Water and Newport City Council to take part. The students take part in activities such as meadow surveying, tree identification, stream sampling and litter picking as well as forest school activities such as camp fire cooking. Over the last three years the Biodiversity in Schools Officer has run activities in pond sampling and Forest School sessions - fire safety, camp fire cooking and willow maintenance.
As well as working directly with the schools in their grounds and with Grounds Maintenance, the Biodiversity in Schools Officer also has a number of other roles and responsibilities.

**Eco Week**

Since 2008, Newport City Council has run ‘Eco Week’ for all Newport schools at Tredegar House Nurseries, one of the Council’s Nursery sites. It is a week long event, traditionally held in June, that has developed over time to offer activities in a range of topics such as recycling, gardening, ecology and sustainability. It is aimed at KS2 and upper KS1 ages.

The Biodiversity in Schools Officer has been involved in Eco Week since 2009 in the ‘Countryside’ marquee, providing activities such as wood cookies, food chain games and feely boxes.

In 2010 the Biodiversity in Schools Officer had more involvement in the organisation of the event. Due to the close working relationship created over the previous years with the schools, the Officer organised booking the schools and organising buses for the event. New for 2010, one of the Countryside Wardens ran a bush-craft activity area, the Biodiversity in Schools Officer invited Gwent Wildlife Trust and the RSPB to come along for the week, and also the Countryside department created a wildlife garden at the Nurseries which allowed an activity to be run looking at habitats.

In 2011, the Officer was the lead organiser for the event, booking the providers, the schools and the buses, co-ordinating the week and managing the budget and Health and Safety issues. In 2011 the decision was taken to run the week in September, taking pressure off Nursery employees who are very busy during June with bedding displays.

Eco Week has evolved over the four years it has been running, and although many providers have been with us from the beginning, some have joined us along the way. The week now includes provision from Gwent Wildlife Trust, the RSPB and Welsh Water, the Ebbw Vale Owl Sanctuary and Animal Zone are also involved, as are local Beekeepers, 5 for life (promoting healthy living), green woodworkers and bush craft specialists. Internal Council departments also run activities on recycling, biodiversity, habitats, food chains, allotments and planting hanging baskets to take back to school. In 2011, around 1200 children visited Eco Week over the five days, from 27 schools across Newport.

The funding for this event comes from a number of sources. Initially it came from the Council’s core budget, but by 2011 this was no longer available, and so the Green Services used CCW Framework Grant funding of £6,000 for the event. For the first few years the event was entirely free to the schools, but in 2010 the decision was taken to charge the schools a nominal fee, as a contribution to the transport costs. By 2011 the schools were asked to pay £3.50 per child, which covered the buses to and from the event as well as all the activities, and two hanging baskets for the school. This gave a total budget of £10,000 for the event (£6,000 from CCW grant, £4,000 from school contributions). The schools were able to make use of their Grounds Maintenance Development Works budget to pay for the event, so the majority of schools were not out of pocket.
Allt yr Yn Nature Reserve

Newport City Council’s Countryside Service used to run regular education visits to Allt-yr-Yn Local Nature Reserve, but in recent history these visits were reduced and eventually stopped due to increased pressure on staff from other directions. In April 2011 these visits were revived on a smaller scale by the Biodiversity in Schools Officer, Biodiversity Officer and the Countryside Wardens. The Biodiversity Officer arranged for the log circle to be repaired and an additional one installed. A pond dipping platform was also installed over one of the ponds.

Two hour sessions are now offered weekly on Friday mornings to classes of 30 children, available on a first come first served basis. The sessions are free but the schools have to make their own way to the Reserve. From Easter 2011 to the summer of 2012 almost all the available sessions were booked, resulting in around 300 children experiencing the LNR. Each session involves two members of staff on a rotational basis. The sessions are based around an introduction to the Reserve, with activities at various points as the group walk through the woodland and meadow. We look at the different habitats of the site and explore the Reserve using a range of senses. They are suitable for KS 1 and 2, with the leader amending the activities as appropriate.

Grounds for Learning

For years 3 and 4 of the CCW Framework Grant, the Biodiversity in Schools Officer has produced a supportive publication for schools entitled ‘Grounds for Learning’. It is normally produced twice a year, in the autumn and spring terms, as a way of communicating information to all schools at once. It includes details on national events, things to do in the grounds at that time of year and activity suggestions. All copies are available online.
Oaklands Wood

Oaklands Wood, or Woodland Park, as it is also known, is a piece of urban woodland and greenspace which is highly valued by the local residents. It is situated in the Beechwood Ward of the City, and at only 2.4 hectares is not as big as some of the other local parks, but is a valuable resource for the area in which it is located. For a number of years (prior to the Biodiversity in Schools Officer being in post), a log circle has been located in the woodland for use by local schools. It was installed by the Council at the request of St Joseph’s RC Primary School, and is also used by Eveswell Primary and Fairoak Nursery. All of these are less than 1km from the woodland. In the case of Eveswell Primary they are just 300m from the entrance of the wood.

Like many urban open spaces, Oaklands Wood suffers from vandalism, and the log circle acts as a focal point for the youths. As a result, the logs have over the years been set alight, pulled from their secure fixings and had graffiti scrawled on them. The access into the woodland has also been very poor for a number of years - steep banks and rocky access made it inaccessible for many. In early 2011, the Green Team (formally Countryside Services) used their CCW Framework Grant to make some improvements to the site in the form of a new kissing gate, steps and a new log circle.

In March 2011, the Mayor and local Councillors, as well as the local residents and children from the 3 local schools, were invited to a tree planting event to ‘open’ the new access and log circle. A mixture of 70 native trees (Coryllus avelana, Prunus avium, Betula pendula) and 50 primroses were planted near to the entrance points to the woodland.
Training Opportunities

The Biodiversity in Schools Officer completed the OCN Forest School Assistant Level 2 course over the winter of 2009/2010. This was in order to help the Officer to fully understand the principles and requirements of Forest School, and so be able to better support schools in their development. As a qualified Assistant the Officer can also support schools in the delivery of their Forest School, assisting at short notice when available in cases of sickness or absence of other staff. The Officer is not often called upon to do this - around 6 sessions since completing the course.

The Biodiversity in Schools Officer has also completed training in living willow structures. The course was an ideal opportunity to train NCC staff in what is fast becoming a popular addition to school grounds. By receiving this training, the Schools Grounds Maintenance Teams can now properly maintain any existing structures that schools have, as well as being able to plant the structures as requested.

Green Space Directory

In year 4 of the CCW Framework Grant (2011/12), the Biodiversity in Schools Officer began to create a directory of Green Space for schools, working alongside the Countryside Wardens and the Parks and Leisure departments. This document aims to give details of a number of accessible natural greenspace areas in Newport which are suitable for visits by school children. It will give a location map with access points, a detailed map of the site with footpaths where appropriate, a basic species list of the site, especially if there is anything interesting to keep an eye out for, and any site specific hazards that the school needs to be aware of. It will be made accessible online on the Council’s website when completed.

Woodland Development

A successful application for the Forestry Commission’s Better Woodlands for Wales Grant resulted in management and education action plans for two woodlands in Newport – Graig and Ringland. Part of that project included an educational element, working with the schools local to the woodlands, developing a trail and producing an activity leaflet to accompany it. The Biodiversity in Schools Officer along with two of the Countryside Wardens are developing the trail with the schools and improving the woodlands for public use. The trail in Graig Wood, Malpas, includes posts at intervals along the route where different activities could take place depending on the surrounding habitat or resources, but which could also be changed each time the schools visited, keeping it flexible. The leaflets produced will also be made available to parents, and the local community who may like to visit the woodland.
Business relationships and partnership working

The Biodiversity in Schools Officer has also been trying to develop links with businesses, other local authorities and other organisations who are interested in helping local schools.

Dwr Cymru

As mentioned in the case studies, Dwr Cymru were able to commit a lot of time and resources to creating a bog garden at Milton Junior School in Ringland. There is also regular contact with Dwr Cymru Officers and the Biodiversity in Schools Officer, because if they are ever looking for schools to pilot projects they will often turn to Newport first. The Biodiversity in Schools Officer can contact schools on their behalf and save them time and hassle. A possible project for the future involves looking at sustainable urban drainage systems (suds) in schools.

Gwent Wildlife Trust and RSPB

Links are regularly made with Gwent Wildlife Trust and the local RSPB field teachers at Newport Wetlands National Nature Reserve. Gwent Wildlife Trust provide advice on habitat management and creation, and also Trust volunteers have offered their services to a number of Newport schools. A group of volunteers spent a day clearing out a pond at Malpas Church Junior School, as it had become choked with reeds and was very silted up. Additionally, there is a very successful nest box making scheme which has been running from the beginning of the Biodiversity in Schools Project. Volunteers from the Trust have gone into over 50 schools and built nest boxes with the children. They make one per class, allowing each child to hit a nail in, resulting in a class nest box built. Since January 2010 over 150 nest boxes have been made in Newport Schools. Volunteers from the RSPB education centre at Newport Wetlands have also been helping with this project, and more are keen to join in where possible. Both the charities also now play an active role in Eco Week, as mentioned previously.

Leadbitter

Leadbitter are the construction company who are currently building the new Hartridge High School. They are a company keen to make links with the local community that they are working in, employing a Community Relations Officer to help with this. In the summer of 2010, the Biodiversity in Schools Officer contacted Leadbitter after noticing a large number of trees had been felled on the school site. A number of schools were interested in having log circles installed, and so the Officer approached Leadbitter to see if they would be interested in supplying the logs for these. They were willing and able to supply the logs for 3 schools to have log circles, and were keen to keep them as local as possible (keep to the feeder schools for Hartridge High where possible). In the autumn of 2010 Leadbitter’s contractors dropped the logs at the appropriate schools, and Grounds Maintenance installed the log circles. The schools to benefit from these were Brynglas, Alway and Eveswell Primary Schools. The Argus was invited to a Forest School lesson at Eveswell Primary in the Spring, and Leadbitter were able to gain some positive publicity for the partnership project.
Additional Work in the Project

Keep Wales Tidy

Keep Wales Tidy were able to help with a bit of clearance work at a school - they involved one of their volunteer groups from the local area to help clear some brambles at Milton Infant School's forest school area. Many Newport Schools are also involved in the annual Keep Wales Tidy Week. Unfortunately, due to the high number of schools in Newport with Green Flag awards, Keep Wales Tidy cannot directly help most of the schools (the Eco Schools award is funded by Keep Wales Tidy, and their grant criteria means that they cannot fund a school twice).

Caldicot and Wentlooge IDB

The Caldicot and Wentlooge Internal Drainage Board are responsible for the water level management across the Gwent Levels. They work closely with many of the local and national conservation bodies in the area, and in 2011 expressed an interest in being involved in the Biodiversity in Schools Project as part of their social responsibility, and with an education focus. At the time of writing the Board are discussing potential ways forward for them to support local schools, after the Biodiversity in Schools Officer met with representatives from the Board and talked through the options. A number of schools have either expressed an interest, or already have on site, wetland areas - be this ponds or bog gardens. The IDB have expertise in the creation and maintenance of these features, and could offer a valuable resource to the Biodiversity in Schools project through labour, advice, resources and equipment.

Local authorities

Other local authorities have expressed interest in Newport’s Biodiversity in Schools Project, and the Officer has been able to visit other authorities to share expertise and explain how the project was set up in Newport. The Ecology section of Blaenau Gwent County Borough Council was able to follow the model set by Newport to implement a similar project with a part time Officer in post. Torfaen County Borough Council have also expressed an interest in the project, wanting to see if a similar project would work in their authority.

There are also regular opportunities to share experiences and ideas on habitat creation and educational activities between local authorities.

Bramble clearance at Milton Infants.

Gwent Wildlife Trust volunteers tackling the pond Malpas Church Juniors.
Project Outcomes and the Future

Over the three years of the Biodiversity in Schools Project, the biodiversity and educational benefits of all 58 school grounds have been enhanced, showing that improvements can be achieved regardless of the size, condition or location of the school's grounds.

Biodiversity and Educational Enhancements

In terms of biodiversity enhancement, the project has focussed on habitat creation, linking this to Newport’s Local Biodiversity Action Plan (LBAP) wherever possible. From April 2009 until March 2012 the following developments have taken place.

All the developments noted are NEW plantings or habitat creations, so does not take into account existing habitats the schools have created before the project began;

- A little over 1km of native hedgerow has been planted.
- 230 native trees have been planted, singly and in small copses
- 33 fruit trees (+30 LTL trees) have been planted, most in groups of 5 or more
- 4 bog gardens have been created
- 22 living willow structures have been planted
- 14 butterfly/bee/insect areas have been planted up
- New meadow areas totalling approximately 1.5 acres have been set aside
- 150 nest boxes have been made in 50 schools
- 4 existing ponds maintained (cleared out and replanted)
- Along with plenty of smaller projects such as bug hotels, log piles and encouraging schools to leave piles of brash and grass clippings.

Educational enhancements and other developments in the grounds have also taken place, and these include;

- Creation of new raised beds or allotment plots (turf stripped) at 22 schools that didn't have any areas previously.
- Installation of new log circles (for Forest Schools and Outdoor Classrooms) at 20 schools, plus continuous checking of existing log circles and replacing as required.
- Supporting schools in their water and waste management by supplying them with compost bins and water butts - 40 compost bins and 80 water butts to date.

The project has also shown that it is possible to develop school grounds for the benefit of the school and biodiversity, with the support of the grounds maintenance contractor. A cross service, cohesive approach with internal grounds maintenance and the schools, as well as a good working relationship with external contractors and the schools, will ensure that the delivery on the ground fulfils expectations.

Preparing the ground for planting at Maindee Primary
Project Outcomes and the Future

The Future

Further funding has been secured from the Countryside Council for Wales for 2012-2014 as match funding for the post, again as part of the larger scale Green Services Framework Grant.

At the end of the initial 3 year period (March 2012), the Biodiversity in Schools Officer met with all Newport schools, presenting a further years’ Service Level Agreement (SLA) to them. Due to the proposed amalgamation of Gwent’s local education authorities, the Council made the decision that all SLAs with schools would be for one year only (2012-13). All services were included in this, from Grounds Maintenance, Cleaning, Building Maintenance and IT Services as well as the Biodiversity SLA. All 61 schools received a copy of the new SLA, and most were very happy with the service they had received and re-signed. There were a small number who did not due to financial restraints on their budgets. The Officer also visited the 4 schools who were not currently signed up to the SLA and they seemed to be interested in what the Biodiversity in Schools project could offer them.

In the interim year (2012-13), before returning to a 3 year SLA pattern, 50 schools resigned to the Biodiversity in Schools SLA.

The next SLA period is 2013-2016, and we will not know until March 2013 how many schools will re-sign for a further year. It is anticipated that the numbers could drop by around 10%. Early returns indicate this level of loss (at the time of writing, 23 schools have resigned for another year, with only 1 that has been in the project for the last 4 years deciding not to resign). If numbers do drop, then there will be a smaller budget for the Officer to make use of, but it should still match the funding from CCW.
Project Outcomes and the Future

And beyond

As a result of the success of the project so far, as well as lessons which have been learnt in the project delivery, there are a number of options as to how to progress and evolve the post. The post needs to act as a conduit for bringing money into the Council in order to make the post more self-sufficient, and this could take place in a few ways:

1. It could for example, carry on in much the same format, but be extended across more local authorities in order to involve more schools. This could make the post self-supporting, reducing the need for funding from the Countryside Council for Wales. It could, however, affect the service which the schools receive if the Officer’s time is spread over a greater number of schools.

2. The post could become more of a Grounds Technical Support role, being the one point of contact for all school grounds related issues, from sports line marking and bench installation to biodiversity enhancements and educational developments. This was decided as not a feasible option for Newport, as the biodiversity and educational focus of the post could become diluted and the focus move towards Grounds Maintenance service delivery.

3. The post could build on the links created with NCC’s Recycling and Sustainability Team in order to tap into other sources of funding. The Sustainability Manager has access to grants which could be put towards developing school grounds and supporting the post. This is already happening, and it is thought sustainability budgets will be used to fund Eco Week in the coming years.

4. The post could become more of a training service, offering training and support to teachers to help them to use their grounds, rather than focussing on grounds development (as many schools will have developed as much as they want to/can do). Forest School training and advise can also be offered, as well as the delivery of Forest School sessions.

5. The post could also help schools look beyond their school boundaries to extend the environmental education curriculum. In particular it could ensure schools have full access to other sites owned/managed or known of within the authority area. This would be supported in the production of the Green Space Directory.

In Newport City Council we feel that the best options for us are 3, 4 and 5 combined. That is, making more cross service links with the Recycling and Sustainability Team, offering more training and Forest School support for within school grounds, and helping schools explore their local area and use other sites around Newport for extending their outdoor curriculum beyond the school grounds.
Newport’s Biodiversity in Schools Project has shown that there is a definite need within schools for support and guidance in developing and using their grounds. Teachers often do not have the time, experience or knowledge to develop their grounds for biodiversity, and so this gap in provision has been filled by a dedicated Biodiversity in Schools Officer. The focus on enhancing biodiversity, improving the grounds as an educational resource and being a point of contact for all things ‘Eco’ has proved crucial in Newport. Our biodiversity has been enhanced through the creation of small wildlife habitats, and teachers are more willing to get outside and use their grounds.

The format of Newport’s Biodiversity in Schools Project could be rolled out in other areas, so long as a member of staff is dedicated to delivering it. It needs to be an ongoing project in order to create the good working relationships between the Officer, schools and grounds maintenance contractors. A long term project will also ensure that schools create the best environments, maintain them and use them sustainably, something which could not be achieved so well with a short term or part time project.

In summary, Newport’s Biodiversity in Schools project has shown clear benefits for the schools and the authority in terms of biodiversity enhancement and educational developments. The value which schools place on the post has been shown by the number of them re-signing for a further year, and increases in biodiversity have contributed to Newport Local Biodiversity Action Plan.
Biodiversity in Schools
Project Set Up Flow Chart

Present proposal to your in house grounds maintenance department.
Find out what other external contractors schools use and talk to these too.

Choose a small cross section of schools for the pilot:
e.g. Small grounds; large grounds; inner city; rural; secondary; primary etc.

Develop Pilot project

• Consider how much need to ask for i.e. how many schools are in your authority and how much could you charge them
• Take into account on-costs of post
• Apply for grant funding - Countryside Council for Wales or similar.

Source funding

Midway through delivery of successful pilot project, present the full project to all the schools. Begin to think about this in September/October!

Present project to Heads Forum or similar group in your LA – write summary report and attend meeting, give presentation etc

Meet individual head teachers to present Service Level Agreement. Perhaps arrange meetings to present to school cluster groups.

Find somebody within the Local Authority who is already ‘in’ with the schools e.g.

Science Advisory Teacher
Sustainable Schools Officer
Eco Schools Officer
Foundation Phase Advisor
Forest School Advisor
And present idea to them, get them on board.

Can the costs of the pilot project be covered by existing posts and budgets? Or do you need to source funding before this begins?

Work with the schools for up to a year, to enhance the grounds, testing process.

The Advisory Teacher may be best placed to do this, or join you in these meetings. You may also be asked to go to Governors meetings as the Chair of Governors will need to sign the SLA – SLAs would generally need to be signed by January for the next financial year so plan ahead.

Choose a small cross section of schools for the pilot:

• Consider how much need to ask for i.e. how many schools are in your authority and how much could you charge them

Write Cabinet Report for creation of post, once you have idea of number of schools who will sign up – hopefully enough to match fund your grant!
Improving school grounds for biodiversity and education

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