

Developing a community of practice: university/high school/managers to promote sustainability in the city of Bilbao

Onaindia, Miren¹; Fernández de Manuel, Beatriz¹; Casado, Izaskun¹; Ametzaga, Ibone¹; Gamboa, Iñaki²; Asua, Amaia²; Garcia, Patxi²; San Martín, Angelica³; Méndez, Leire¹

¹**UNESCO Chair on Sustainable Development and Environmental Education.
University of the Basque Country**

² County Council of Bilbao

³ INGURUGELA. Department of Education, Basque Government

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The present project is the result of the integration of policymakers, managers, schools, teachers and scientists, about the global awareness of wetlands for wildlife conservation

- 1- The project
- 2- Aims of the project
- 3- Collaboration university/secondary schools/managers
- 4- Multiple activities
- 5- Lessons learned: strengths and weaknesses
- 6- New challenges

1- The project

❖ Proposal of schools (Agenda 21)

❖ The scholars of Bilbao through the AGENDA 21, proposed to enhance biodiversity in the city

❖ Problems of previous artificial pond

❖ High cost: cleaning every 15 days
(380m³ water, 1.700 €)

❖ Bad smell: eutrofication, ducks droppings

❖ Low biodiversity

❖ Creation of a wetland



Europe Park
Txurdinaga neighborhood, Bilbao

2- Aims of the project

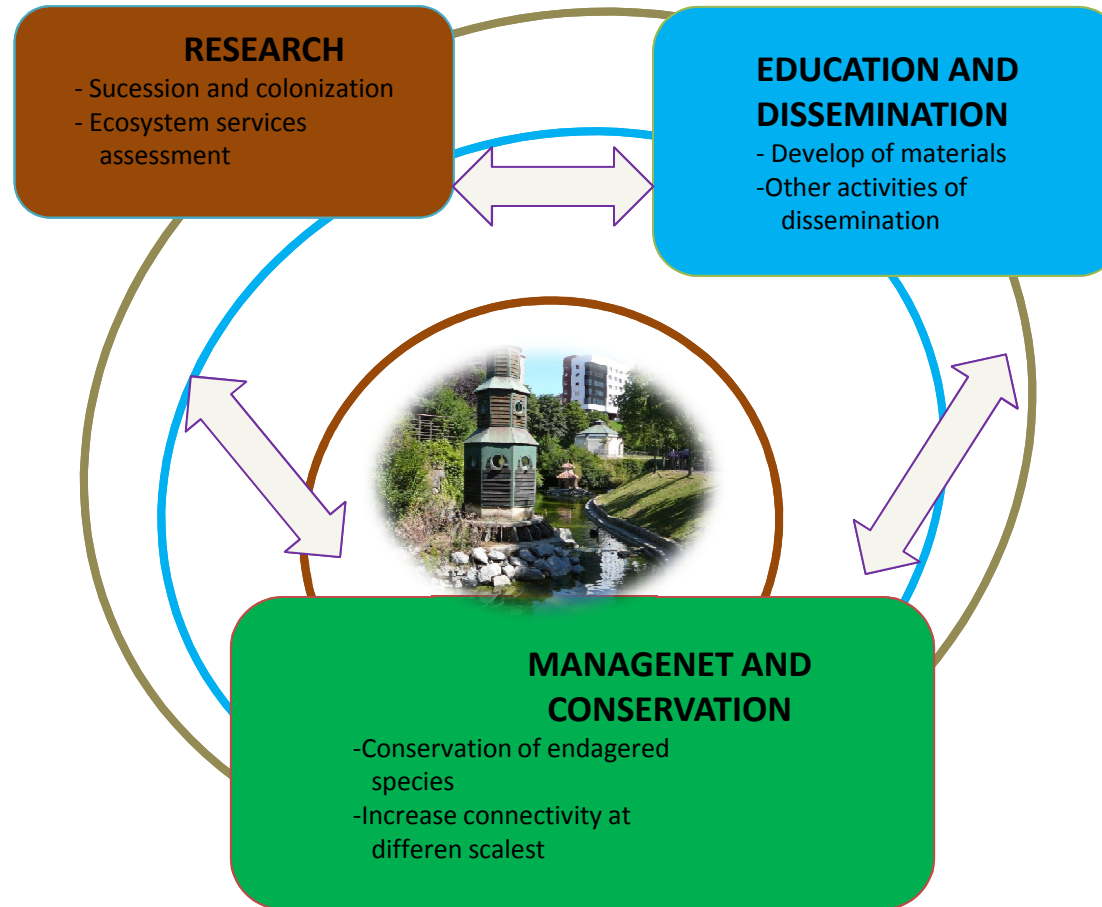
- Application of knowledge to analyse real problems, in order to contribute to global sustainability
 - enhance biodiversity in the city and create suitable habitats for endangered species
 - water management
 - favour water purification (install a green filter)
- Create a community of practice for sustainability
 - wetlands play a crucial role in maintaining and encouraging the link between people and wildlife
- Provide a holistic approach and contribute to SDG 4, 15, 11 goal: to halt biodiversity loss and to develop suitable cities
 - Biodiversity, Urban ecology, ESD,

3- Collaboration university/secondary schools/managers

- University: Master on Sustainability (Student's dissertations)
- Agenda 21 of the City of Bilbao, primary and secondary schools
- Basque Government: Education and Environment departments (INGURUGELA)



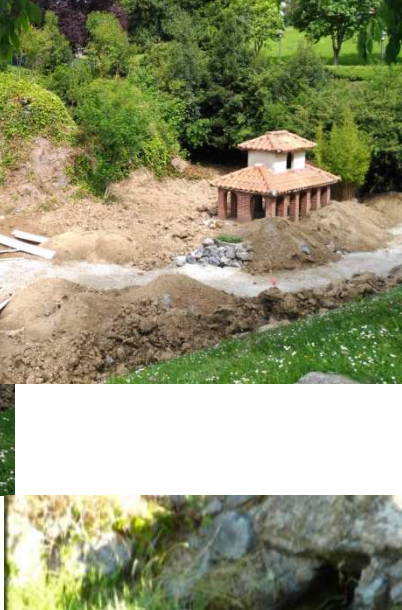
4- Multiple activities



The project is scenario of multiple activities



Construction process



naturalization process



Trees: *Alnus glutinosa*; *Fraxinus excelsior*; *Salix alba/atrocineria*

Shrubs: *Cornus sanguinea*; *Prunus spinosa*; *Sambucus nigra*; *Tamarix sp.*

Herbs: *Lythrum salicaria*; *Trifolium repens*; *Iris foetidissima*; *Mentha aquatica*; *Juncus effusus*; *Phragmites australis*; *Sparganium erectum*; *Scirpus holoschoenus*; *Typha latifolia*

Floating plants: *Ranunculus aquatilis*; *Nympha alba*

Algae: *Chara vulgaris*; *Callitriche palustris*

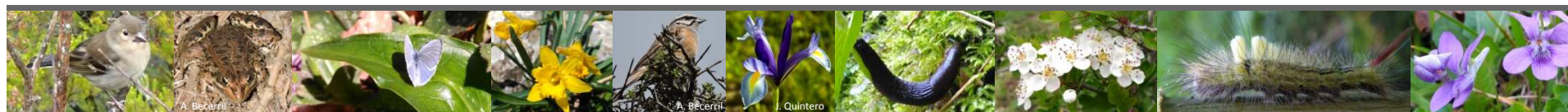
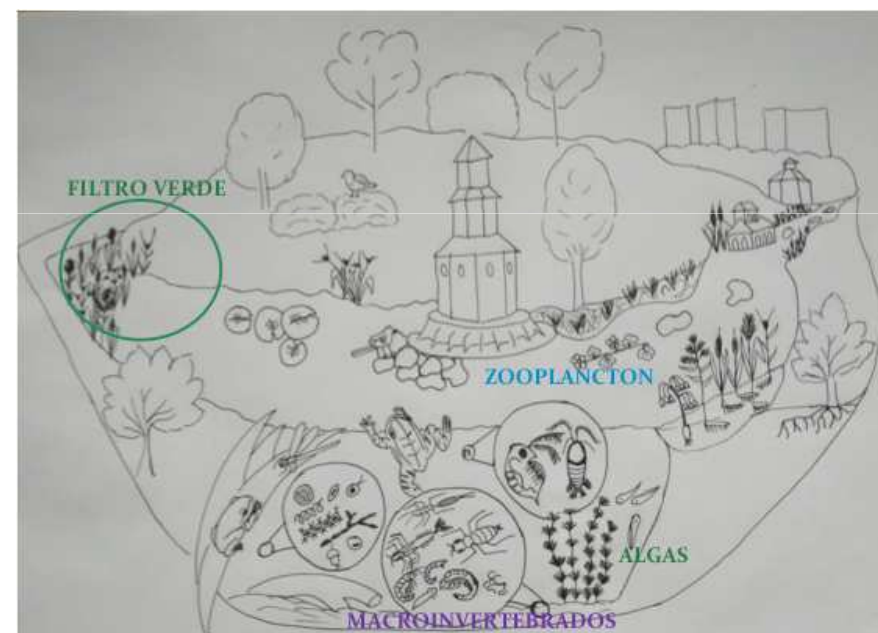


Scientific Research

- Evaluate the increase in species richness in the wetland over a 2 year period (phytoplankton, zooplankton, algae, macrophytes, macroinvertebrates, amphibians)

-Water physical and chemical parameters will be measured in situ (dissolved oxygen, pH, temperature, conductivity, turbidity).

Comparisons



Education and dissemination

-Main activities with scholars: sampling and identification of common macroinvertebrate species and why they are used in water quality assessment, ecosystem services, insects (an insect house has been installed near the pond so it serves as a nesting site for insects), birds

- General public: diffusion activities, panels, organization of activities in collaboration with different NGOs.

Naturalización del Estanque Parque Europa

Naturalización del Estanque Parque Europa

¿Por qué?
Realizamos la naturalización del estanque del Parque Europa en respuesta a la petición de escolares de 51 centros educativos de la Agenda 21 Escolar de Bilbao, programa escolar por la mejora ambiental de Bilbao, que se suscribieron para ayudar a que sea más sostenible y aumentar el número de plantas y animales del parque, al igual que ya se está haciendo en otras ciudades europeas.

¿Quiénes?
30.000 estudiantes de los 51 centros de Agenda 21 Escolar, Inguzeta y el Ayuntamiento, con el patrocinio de la Cámara Urreaga sobre Desarrollo Sostenible y Educación Ambiental y el Departamento de Biología Vegetal y Ecología de la UPV/EHU.

Modificaciones a realizar

- Se remodela el estanque con la recreación de un cauce fluvial
- Se eliminan las plantas invasoras
- Se planta vegetación de lagos y arroyos y de ribera
- El agua del estanque se va a limpiar mediante un filtro vegetal, evitando el uso de productos químicos.

Mejoras previstas
El estanque cambiará su aspecto y habrá nuevos sonidos. Se volverá más natural para facilitar la vida de animales como pájaros, anfibios e invertebrados autóctonos además de las plantas características de humedales. Se espera que lleguen al estanque libélulas, tritones, salamandras, pececillos, juncos, gophers... Reducción importante del consumo de agua, ya que no serán necesarios los tratamientos de agua, evitando un consumo mensual de aproximadamente 750.000 litros de agua y un coste económico muy elevado. Las aves que hasta ahora habitaban el estanque han sido trasladadas de forma temporal, para reincorporarse de forma progresiva al nuevo hábitat que se va a crear, de manera que su número sea compatible con las nuevas especies.



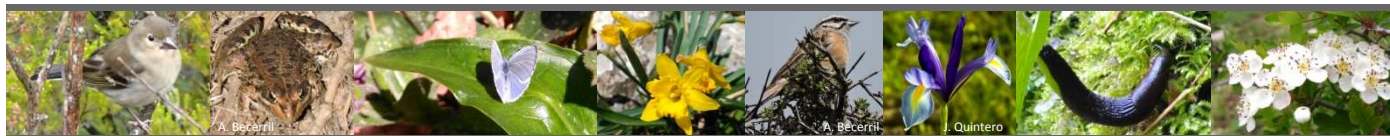
¡Animate!!
Te animamos a que visites el estanque para ir viendo su evolución. Nos puedes enviar tus comentarios y fotos de los nuevos habitantes que veas viendo al correo electrónico agenda21@bilbao.eus





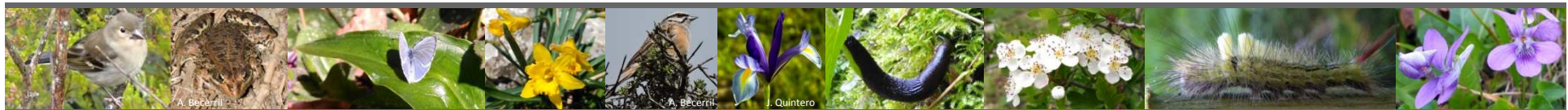






Policymakers and managers

- Work in partnership to identify appropriate sites for wetland restoration that allows for conservation of species of concern and to maintain or extend existing wetland networks.
- Provide advice on best practice and integrate local and regional initiatives to improve connectivity in the wider scale, and to promote appropriate management on restored areas.



3- Lessons learned

Strengths

- New viewpoint for reflecting on sustainability: Why biodiversity in cities ?
- From local to global
- Transdisciplinarity and implication of neighbours: students, teachers, managers, working together

Weaknesses

- Initial reluctance: pond was inhabited by ducks, which are considered attractive by some people
- Requirements of naturalization project are sometimes difficult to meet for the city council technicians (building companies, greenhouses)



4- New challenges

- more information/education for the general public is needed
- develop postgraduate projects and research
- future restoration projects: improve urban green infrastructure (health)
- evaluate impact
- find jobs

Thank you

<http://www.ehu.es/cdsea>
miren.onaindia@ehu.es

