



## **WATER ON THE LAND**

***Féidhlim Harty: FH Wetland Systems. [www.wetlandsystems.ie](http://www.wetlandsystems.ie)***  
**Tmeline,**

Initially a live training event but then recorded for perpetual delivery

All Wednesdays at: 2PM EST, 7PM UK, 8AM HST, 11AM PST

September 23

September 30

October 7

October 14

Each session is 90 minutes.

### **instructor Bo,**

Féidhlim Harty is an environmental consultant, writer and educator living in Lahinch, Co. Clare. His company, FH Wetland Systems (established in 1996), offers guidance and consultancy on eco-friendly wastewater treatment training and education, and holistic landuse management for catchment protection and regeneration. His books include Septic Tank Options and Alternatives, Permaculture Guide to Reed Beds and Towards Zero Waste.

### **Course Synopsis,**

Septic tank effluent and municipal sewage between them comprise one of the largest impacts on water quality in Ireland and throughout the world. Many conventional sewage treatment methods can offer excellent filtration properties, but can be expensive and energy intensive to implement and maintain. Nature based solutions can be used for treatment of domestic septic tank effluent and municipal sewage. These can offer excellent treatment, as well as habitat value, low energy input and carbon sequestration. They include constructed wetlands, reed beds, willow filters, source separation technologies and other similar systems.

## **Course Outline**

More even than individual solutions per se, we will explore ways of thinking and seeing that will help us to respond to our local waterways with action that is both effective and grounded in care and love for the world around us.

### **Session 1 Introduction to water quality; and an overview of solutions.**

While the focusing will be on Irish EPA water quality figures, the challenges and solutions are common throughout the world, so the principles will apply to your country, state or local community.

- Why water quality is important
- The health of our waterways
- Factors influencing water quality health
- Solutions for sewage, stormwater, agricultural runoff and hydrological damage to waterways

"In this session we will learn why water quality is important; gain an understanding of what clean water and polluted waterways look like and examine what pressures exist which impact on water quality. Not to focus on the challenges without exploring solutions, we'll also look at the ways in which we can address these problems and repair our waterways." Féidhlim Harty

### **Session 2 - Exploration of sewage treatment using Nature Based Solutions**

- Conventional systems
- Treatment wetlands (designing, building and planting reed beds and constructed wetland systems)
- Willows as part of sewage treatment (zero discharge willow systems and incorporating willows into conventional infiltration design)
- Source separation technologies and dry toilet systems (overview of the technologies)

"In this session we will examine the options for sanitation and sewage treatment, with an emphasis on nature based solutions which are lower in embedded energy and better for biodiversity. Our exploration will provide participants with an understanding in constructed wetlands, reed beds and willow filters, as well as a suite of source separation technologies which allow for nutrient cycling and closed loop thinking in the arena of sanitation."

### **Session 3 - Exploration of stormwater management using Nature Based Solutions**

- Standard management approach to stormwater
- Conventional engineering SUDS systems  
(Sustained Urban Drainage Systems)

- Nature Based Solutions for additional stormwater filtration and habitat enhancement
- Designing, building and planting NBS Stormwater Systems

"Session 3 will explore the impacts of stormwater runoff from our urban areas as well as from one-off developments, roads and other areas of hard standing. We will look briefly at the conventional approaches to stormwater management, but will focus particularly on nature based solutions which offer multiple benefits for filtration, biodiversity and beauty on the sites we are working on."

#### **Session 4 - Farm and catchment scale approaches to water management**

- Issues with farm and yard runoff
- Solutions using Nature Based Solutions
- Catchment management as if water mattered
- Rewilding as a tool for waterway repair

"This final session will explore farm and catchment scale solutions for water management. Conventional approaches to farming have multiple challenges stitched into the very fabric of both policy and practice, so alternative methodologies and techniques are already evolving to meet these myriad problems with a whole suite of solutions. We will look at catchment management in a broad sense, as well as farming per se, and explore the role of rewilding as a tool for broad scale landscape repair."

#### **Remote method used for tracking attendance.**

All our courses require the return of assignments and /or quiz question. In addition attendance is tracked via IP address and login time.

Dendra J. Best. Education Director

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