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**The Study of Cooling Water Discharge into British Waterways Canal**

**Jafar Ali,**  
**John Fieldhouse and Chris Talbot**  
**University of Huddersfield**

**Aim**  
To develop a 3D interactive mathematical model to ensure safe and effective use of a natural resource.

**Advantages of British Waterways canal water cooling system**  
- Using British Waterways canals for cooling systems can save £100 million on energy bills  
- Reduce carbon emissions by one million tonnes.

**The problem**  
Excessive increase in ambient water temperature reduces the dissolved oxygen in the water which threatens aquatic life.

**Results**  
The final predictive model has been applied to existing canal sites where the results compare very favourably with the measured on-site results. It is now complete for national use on canal waters and lakes.

**Conclusion**  
The work results in an interactive model that can be used to maximise use of canal water and lakes without prejudice to aquatic life. Environmental Agency approval is now being sought for it use on a national scale.