# JBA Trust Limited

## Annual Report

## Year ending 31 October 2015

**Charity Number: 1150278**

**Company Number: 07840801**

The JBA Trust is an independent charity, registration No. 1150278.

We aim to enhance understanding and management of risks in the water environment by enabling research, education and training.

# Report of the Trustees for the year ending 31 October 2015

The trustees are pleased to present their annual report for the year ending 31 October 2015.

## Director's Report

Over the course of the past year we have continued our programme of activities to promote research and education in the fields of environmental risks and resources management. I am pleased to report on our progress in our financial year 2014-15, during which we have built on initiatives started since our foundation in 2012.

Our work continues to fall broadly into educational and research activities, which naturally overlap in some of our projects. Thematically, we seek to work in three important areas: environmental risks, environmental resources and sustainability. Our focus is on the water environment. This year we have continued to fund work in these areas, whilst continuing to generate research outputs.

The JBA Trust's headline achievements for the year are:

- Our contributions to educational and knowledge exchange events with schools, public agencies and conferences
- Financial sponsorship for twelve post-graduate students enabling them to pursue training and research at masters or doctoral level
- We have engaged with academic researchers to support proposals to UK research councils underlining industry needs for research in water and environmental risk management
- We have continued to engage with UK universities to help set up studentships, placements, collaborative research and to contribute to advisory boards
- We have again supported other third sector organisations including the British Hydrological Society, through our sponsorship of student bursaries, and CIWEM, through sponsorship of a Journal of Flood Risk Management prize which has made one paper chosen by the Editors available free of charge to all through our payment of publication fees.

We would like to thank all the organisations and individuals who have worked with us, not least the students and early career researchers who we have been able to support. We are grateful for continued commitment to funding the JBA Trust from the JBA Group companies and their Directors.

Rob Lamb

Director

# 1 Our purposes and activities

The purpose of the charity is to enhance understanding and management of risks in the water environment by enabling research, education and training.

Our activities for the year reflect the Trustees' consideration of the Charity Commission's guidance on public benefit. The major areas of activity are:

- Provision of water management training and education in schools and in the flood risk management community
- Support for post-graduate education through provision of technical expertise and financial bursaries for MSc and PhD studentships
- Facilitating collaboration between academia and industry to deliver scientific research that improves society's understanding and management of environmental risks and resources
- Publication and dissemination of research outputs, enabling knowledge exchange and sharing best practice
- Sponsorship of relevant conferences to enable students in higher education or early career professionals to attend

This report reviews the activities of the JBA Trust over the past year and how the outcomes of our work have delivered public benefit.

# 2 Environmental Education and Training

JBA Trust supports a wide range of activities aimed at encouraging students at schools and universities across the country to develop an interest in water and environmental management topics, which could ultimately lead them to pursue careers in the field. Our education and training activities also extend to the wider community and flood risk management professionals.

## 2.1 Physical Models

In 2014-15, we focused on developing physical models of rivers and coasts which could be used to support our knowledge exchange and education activities. The Trust has three physical models to demonstrate the key principles of both flood and coastal risk management: a hydraulic flume (trailer mounted), a mini-flume and a wave tank. We have also commissioned a new, larger scale flume which can be transported and housed in a van along with the other physical models and this will be built in 2015-16.

The key activities for each physical model are detailed below:

### 2.1.1 Trailer Flume (Trailer Mounted)

The mobile hydraulic flume demonstrates how the design of culverts, bridges and weirs affects the flow of water in rivers and their impact on flooding. It is our largest physical model and shows the flow of water in a simple channel, driven by a system of re-circulating pumps. The flume features scale models of typical engineered structures and observers can see in real time how different structures interact with the flow and what happens under flood conditions

The demonstrations have enabled us to promote best practice in channel design and maintenance by explaining open channel hydraulics to professionals working in roles connected with flood risk, especially groups with varying levels of formal technical training in river hydraulic theory.

Jeremy Benn gave two demonstrations in December 2014, one to group of A-level students from Calder Valley High School to tie in with their project work on flood risk in the Calder Valley and one to the Calderdale Community Flood Board, a group including staff from the EA, Defra, Calderdale Council and the Rivers Trust.

Mike McDonald and Alice Davis demonstrated the flume to the general public at the Shipley Street Arts Festival in June 2015 which tied in with the festival theme of water, rivers and the canal.

The hydraulic flume demonstration video is now available on the JBA Trust website www.jbatrust.org/jbademonstrationflume

*Photos: The trailer flume in action*

### 2.1.2 'Mini' flume

The 'mini' flume also demonstrates the interaction of engineered structures with flow in a channel but is more portable than the trailer flume and can be set up inside, for example in a classroom or office.

The mini flume was built in July 2015 and has provided an excellent learning resource for flood awareness activities and events for the general public, including the Great Yorkshire Show where we worked alongside the Environment Agency, MetOffice, emergency services and the Association of Drainage Authorities (ADA).

We are exploring collaboration opportunities with other organisations whereby they use the flume for their outreach and education activities. For example, following a demonstration at their training centre in October 2015, the North Yorkshire Fire and Rescue Service would like to use the mini-flume to support their water safety outreach programme with schools.

*Photo: Thomas Askham from North Yorkshire Fire and Rescue using the mini flume to demonstrate the potential dangers of weirs in rivers*

### 2.1.3 Wave tank

The portable wave tank demonstrates the performance of coastal defences under different wave conditions. It was developed with a team of PhD students from the Fluid Dynamics Centre for Doctoral Training (CDT) at the University of Leeds, the Coastal Risk Management team at JBA Consulting and Hydrotec Ltd.

The final tank was completed in August 2015 and has been used at a demonstration to the EA, Defra and members of the public at the launch event for the Solway Firth Flood Warning Scheme.


*Photo: Dan Rodger and David Bassett of JBA demonstrating coastal processes to the public at the Solway Firth Flood Warning Scheme Launch.*

## 2.2 STEM (Science, Technology, Engineering and Maths) activities

### 2.1.4 Skipton Girls High School

Working with schools, the JBA Trust aims to encourage students to participate in STEM (Science, Technology, Engineering, Maths) subjects and show how the skills gained in these subjects can be applied in the real world.

We recognised that we need to align our environmental education activities with the curriculum in STEM subjects to fully engage with schools and develop learning resources that can be scaled up and shared more widely.

The Skipton Girls High School is an engineering academy and in 2014-15 we started working with the curriculum leader for Geography to develop lesson plans for two key areas of environment risk management:

- GIS and spatial data analysis (incorporating risk and hazard)
- Physical models (elements of engineering, maths and geography in the context of flood risk)

### 2.1.5 Geographical Information Systems (GIS) in Schools

JBA Trust has helped to share industrial expertise with school students through a variety of routes including class workshops, seminars and lectures.

This year, we continued our support for GIS workshops for students and teachers at Tarporley High School in Cheshire. Mike Williamson, a Senior GIS Analyst at JBA Consulting, shared his GIS expertise and gave students an insight into how GIS can be applied to environmental challenges in the real world.

The JBA Trust funded the school's subscription to ArcGIS Online enabling students, teachers and industry to remotely access ArcGIS. This allows students to access GIS at relatively little cost and industry partners can add data and work with the schools to apply GIS to real world examples.

### 2.1.6 Tomorrow's Water

JBA Trust supported the CIWEM Tomorrow's Water competition again in 2015. The winners go on to compete against over 30 countries for the coveted Water Drop trophy and $15,000 at the Stockholm Junior Water prize. Students from across the UK took part in the contest, each presenting an original water based project with immediate relevance to a range of global water challenges.

The judging panel selected Sebastian and Renatus Groothoff from Beech Grove School in Kent as the winners for their project 'Fish Out of Thin Air' which designed a closed loop aquaponic system to produce a sustainable source of fish protein.

*Photo: Sebastian and Renatus receiving their prize from Norman Lowe, President of CIWEM*

# 3 Support for students in higher education

There are many academic subjects that touch upon our core interests in environmental risks and resources. Whilst undergraduate courses such as Geography and Environmental or Physical Sciences are important, the relevant specialist training comes into focus at Masters or PhD level. JBA Trust therefore supports students and projects at this level.

## 3.1 MSc Projects

JBA Trust helps provide students with placements, technical expertise and access to software resources and case study data, as well as offering a platform for students to share highlights from their research projects.

Students gain an insight into how methodologies and techniques are applied in industry and have an opportunity to experience how they will be able to use their skills in a career in the industry.

In 2014-15, the Trust helped seven students from the Universities of Exeter, Leeds, Lancaster and Imperial College London.

The students worked with JBA Consulting staff on a wide range of MSc projects including:

- Design and build of a prototype wave tank to demonstrate the performance of coastal defences under different wave conditions and inform the final design of the JBA Trust's wave tank model (Leeds University).
- Flood estimation using the Revitalised Flood Hydrograph (Urban ReFH) method on heavily urbanised catchments (Imperial College London).
- Investigation into the impacts of water regime on rice production and methane emissions in Vietnam (Exeter).
- Climate change adaptation in the social housing sector: opportunities, drivers and challenges (Leeds University).
- Spatial interpolation of high-rainfall events in England and Wales (Lancaster University).

We also supported Nicole Friedrich Neumann, a fourth year student of Sanitary and Environmental Engineering at the Federal University of Santa Catarina in Brazil, for her summer project in Environmental Sciences. Nicole completed this project at the University of Liverpool through the Science without Borders programme.

Science without Borders is a Brazilian Government scholarship programme which aims to send 101,000 Brazilian students on undergraduate and PhD sandwich courses, and full PhDs to study in science, technology, engineering, mathematics and creative industries at top universities around the world.

## 3.2 PhD Projects

JBA Trust is supporting Peter Metcalfe, a PhD student at Lancaster Environment Centre, who is investigating intermediate complexity modelling approaches for catchment management. The project aims to develop models to support catchment management decisions by predicting the effects of working with natural processes on flood flows in stream networks and downstream rivers.

Peter's research, supervised by Keith Beven in partnership with JBA Consulting and the Centre for Global Eco-Innovation, builds on Lancaster University's research interests in catchment hydrology and uncertainty analysis, along with JBA expertise in broad scale modelling. The ambition is to help provide evidence on the catchment-scale benefits of in-channel flow management measures inspired by natural

processes to support robust and adaptive strategies for catchment management. Interim outputs of Peter's research are available on the JBA Trust website.

JBA Trust is also supporting Ashley Buchan, a PhD student at the University of Edinburgh, who is using insect monitoring to understand the impacts of a new Water Level Management Plan (WLMP) to inform future management and policy decisions for the restoration of wetlands.

## 3.3 The British Hydrological Society and JBA Trust Studentship Awards

Specialist skills are needed to manage the water environment. In 2014-15 we continued our partnership with the British Hydrological Society (BHS), a registered charity, to support students working towards relevant MSc qualifications who will go on to play a vital part in the future management of the water environment.

Now in its fifth year, the Studentship Award aims to encourage talented students wishing to pursue development of their academic experience and qualifications in this sector. In 2014-15, eight bursaries were awarded to students applying for a hydrology related MSc.

- Thomas Stanton, studying for an MRes in Geography at the University of Nottingham
- Shannon Gilbert, studying for an MSc in River Environments and their Management at the University of Birmingham
- Isabelle Farley, studying for an MSc in Hydrology and Climate Change at Newcastle University
- Laura Sutton, studying for an MRes in River Science at the University of Worcester
- Emma Watts, studying for an MSc in Hydrogeology at the University of Birmingham
- Elliott Swallow, studying for an MSc in Sustainable Water Management at Lancaster University
- Emma Bullen, studying for an MSc in Hydroinformatics at Newcastle University
- Christopher Allman, studying for an MSc in Hydrogeology at the University of Birmingham

The JBA Trust also developed and improved a web-based application management system for the BHS to support the application process. The system was successful again this year and increased the efficiency of the process by managing and tracking applications and supporting documentation.

## 3.4 Flood and Coastal Risk Management Postgraduate Certificate Scholarships

The challenges of more frequent extreme weather and new flood risk responsibilities mean that there is a growing need for skilled water and environmental risk management professionals.

In recognition of this, the JBA Trust awarded a scholarship in 2014-15 to fully fund the tuition fees for Lancaster University's Flood and Coastal Risk Management Postgraduate Certificate course. The successful recipient was Faye Tomalin, an Engineering Assistant in Flood and Coastal Risk Management at the Vale of Glamorgan Council.

# 4 Science and research

One of the aims of JBA Trust is to facilitate collaboration between academia and industry and deliver scientific research that improves society's understanding and management of risks in the water environment.

## 4.1 Summary of active research projects in 2014-15

In 2014-15 we collaborated with universities, research institutions and organisations. Many of our projects delivered research outputs (see Section 5). The following collaborative research projects made good progress this year.

## 4.2 Infrastructure flood risk analysis

JBA Trust continued to work with the ITRC (Infrastructure Transition Research Consortium) team led by Oxford University to develop and apply spatial risk assessment models to infrastructure networks.

A generic bridge fragility model was developed using the historical failure data published by the Trust and Network Rail asset data. When combined with JBA Consulting's independently-derived national spatial model for river flow extremes, the fragility model predicts an expected rate of bridge failures per failure event that is within the 95% confidence interval about the historical mean rate.

The research includes a new empirical study of the probability of railway bridge collapses and work with ITRC partners to develop strategic risk models for infrastructure networks that will be able to inform long term and large scale infrastructure planning.

Further details of the research can be found online:

www.jbatrust.org/how-we-help/research/infrastructure/national-analysis-of-bridge-scour-failure-risks/

## 4.3 Tools and guidance for covariate analysis of flood and wave threshold exceedances

This NERC funded project aimed to transfer advances in statistics to flood risk science. Working in partnership with Lancaster University, the six month PURE (Probability, Uncertainty and Risk in the Environment) project enabled the Research Associate, Ross Towe, to develop a prototype/ demonstrator to help risk analysts in trialling and experimenting with advanced statistical methodology for the analysis of threshold exceedance data.

The two main applications are river flood risk and offshore oceanography. A case study of this project is now available to view on the JBA Trust website: www.jbatrust.org/how-we-help/publications-resources/rivers-and-coasts/improving-statistical-models-of-large-scale-flood-events-poster/

## 4.4 Assessing the multiple benefits of SuDS

In 2014-15 we supported the development of a new tool to identify and assess the potential multiple benefits of SuDS schemes. Led by CIRIA, this project created a freely available Benefits of SuDS Tool (BeST) and guidance, to help practitioners estimate the impacts that drainage schemes can create and help make assessing benefits easier without the need for full scale economic inputs. JBA Trust was one of the project partners and worked with the team to develop case studies and test the tool. BeST is available to download online: www.susdrain.org/resources/best.html

Sustainable drainage systems (SuDS) provide multiple benefits, beyond what is expected from a conventional, piped approach. This is possible because SuDS can enhance urban areas and contribute to economic and environmental benefits.

BeST is complemented by the updated 'SuDS Manual' which was launched alongside the BeST in November 2015 at the House of Commons.

## 4.5 Susceptibility of catchments to INTense RAinfall and flooding (SINATRA)

The SINATRA project aims to advance scientific understanding of the drivers, thresholds, and impacts of flooding from intense rainfall in 'at-risk' UK catchments. Decision-support tools will be developed to improve the capacity of forecasting agencies to deliver impacts-based warnings and predictions needed for managing flooding from intense rainfall.

The project is funded by NERC, the Environment Agency and the UK Met Office under the Flooding from Intense Rainfall thematic programme, and started in September 2013.

In 2014-15 JBA Trust provided expertise on applied research for flood forecasting, risk assessment and management and created a database of historical flood event chronologies and event modelling reanalysis. This feeds into the assembly of a comprehensive archive of flood events and impacts for analysis in cooperation with the SINATRA researchers based at Newcastle University.

A summary of the JBA Trust research is available online: www.jbatrust.org/how-we-help/research/risk-analysis/susceptibility-of-catchments-to-intense-rainfall-and-flooding-sinatra/

## 4.6 Knowledge Transfer Partnership on spatial extremes in river flows and rainfall

JBA Trust is working with Lancaster University as part of a Knowledge Transfer Partnership to develop improved models for extremes of localised and widespread flooding. The focus of the project is on risks caused by a combination of river and surface water floods – where high rates of overland flow, typically associated with intense rain storms, can be particularly damaging in built up areas. Some of the UK's worst floods in recent years have been of this type.

The statistical models developed by this project will ultimately lead to better estimates of flood risk in cities, over large scales and for important infrastructure networks such as railways and roads.

The project builds on strong existing research links between Lancaster University and JBA and will be supported by academics from the Department of Mathematics and Statistics, led by Professor Jonathan Tawn, and the senior management team at JBA. The partnership will also contribute to the work of the JBA Trust through scientific publications and advancing knowledge in this important area of research.

## 4.7 Attribution of winter 2013-14 flooding to anthropogenic climate change

JBA Trust contributed to a study led by Oxford University to examine the possible contributions from climate change caused by human activities to the likelihood of flooding in winter 2013-14, or events of a similar nature.

The Trust obtained permission from JBA Risk Management Ltd to use their flood map data and from Ordnance Survey for use of their property data to assess the properties at risk of flooding in the Thames river basin to be incorporated into the study. A scientific paper was submitted into Nature Climate Change and will be published in 2015-16.

## 4.8 Flood Forecasting Pilot

Heavy rainfall in the UK is predicted to increase under climate change. Understanding how state-of-the-art model rainfall products can improve flood forecasts and how uncertainties in these products can impact forecast accuracy is a key research area that is of great interest to academia, consultancies and the Flood Forecasting Centre at the Met Office. Research in this area will ultimately lead to improved flood forecasts.

Working with the Climate and Geohazard Services (CGS) Hub at the Leeds School of Earth and Environment, JBA Trust hosted a post-doc, Dr Sophie Cowan, to carry out initial proof-of-concept research on the impact of rainfall data resolution on the accuracy of flood forecasts. In September 2015, Sophie delivered the first phase of modelling and the Project Lead, Dr Cathryn Birch, is now completing the research which will be summarised in a report and/or publication.

## 4.9 Humberhead Wetlands PhD, Edinburgh University

A Water Level Management Plan (WLMP) to re-wet the Thorne moors is currently being implemented by JBA Consulting on behalf of Doncaster East Internal Drainage Board in conjunction with Natural England as National Nature Reserve land managers. In partnership with Natural England and JBA Consulting, JBA Trust is supporting Ashley Buchan, a PhD student at Edinburgh University who will monitor and interpret the impacts of the WLMP to inform future management and policy decisions for the restoration of wetlands.

The project aims to use insect monitoring to: a) understand the extent and rate of change in the particular areas restored; b) identify Red Data Book and rare species to define significant areas for priority conservation on the Moors; and c) develop a methodology which centres on the invertebrates for assessing the development of raised mires which can be applied to similar sites elsewhere.

# 5 Publications, resources and knowledge exchange events

The JBA Trust aims to publish and disseminate research outputs, enabling knowledge exchange and sharing best practice. The following publications and resources were created and shared in 2014-15.

## 5.1 Online catalogue of nature-based flood risk management projects in the UK

In partnership with Lancaster University, British Water and JBA Consulting, the Trust hosted a summer internship to build a catalogue of 'nature based' flood risk management case studies and build up information on performance in relation to pollution and flooding mitigation. The intern, Duncan Nicholls, created an interactive geo-database which is now freely available for practitioners and researchers to use.

The geo-database shows where people and organisations are working together with natural processes to enhance features that can help to reduce the risk of flooding downstream, often in tandem with expected environmental benefits such as reducing diffuse pollution, erosion or sedimentation problems, whilst improving biodiversity and amenity value. A project report documents the process involved in creating the geo-database and is available to download from the JBA Trust website.

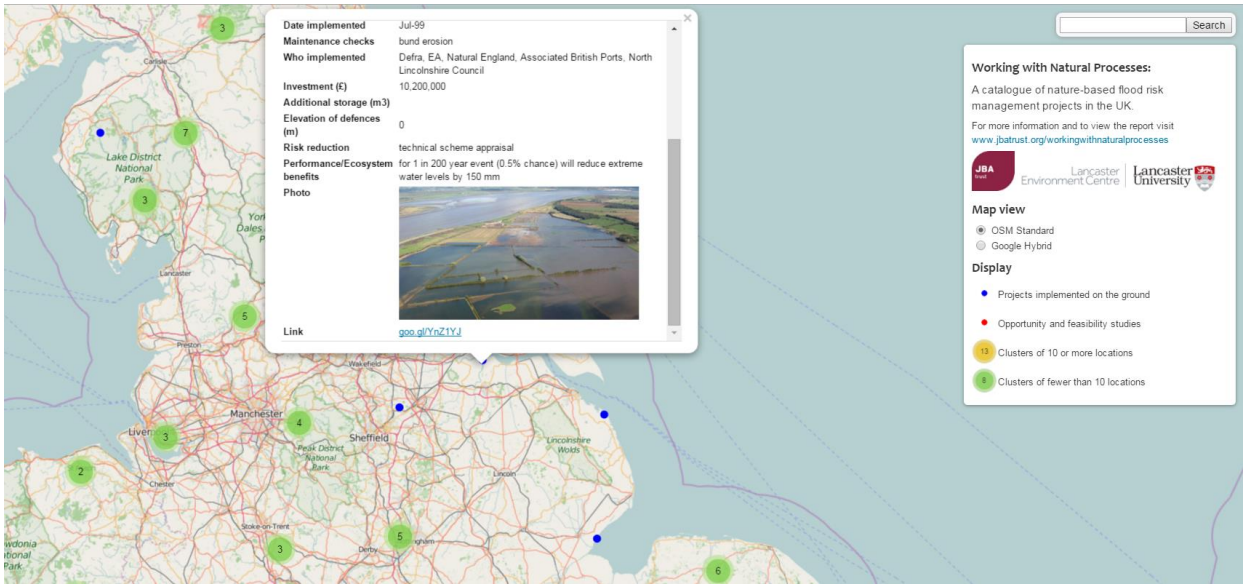


**Figure 1:** The Working with Natural Processes website (http://naturalprocesses.jbahosting.com/)

## 5.2 Maths Challenge workshop: Multi-scale mathematics for mitigating severe environmental events

Led by the University of Leeds and Heriot-Watt University, the EPSRC funded Maths Forsees Network aims to set up collaborations between the mathematical sciences and environmental change communities and promote mathematical modelling of environmental hazards.

A 'Maths Challenge' workshop was held in September 2015. Four organisations (JBA Trust, Fugro GEOS, the Met Office and the Environment Agency) posed challenges that involved both broad and specific issues relating to the application of models to predict and analyse environmental events. Over the course of four days, 45 mathematicians and environmental scientists worked to develop solutions (or partial solutions) to these challenges.

The team working on JBA Trust's challenge, 'Identification of Coherent Weather Features in Three Dimensions' succeeded in visualising weather features through a vertical structure. While atmospheric

scientists have previously required humans to identify groups of weather features moving through time, the group have made significant progress in replicating this human brain processing using computers to recognise sets of pixels connected in space and time. This work may provide a basis for the identification of other sets of weather features in 3D and 4D, helping to identify and study events using atmospheric data.

Maths Foresees will continue to support knowledge exchange events, technical reports and outreach projects with the public over the next year.

## 5.3 Bridge scour elicitation workshop, Bristol University

JBA Trust contributed to a proposal by Bristol University to the NERC PURE programme for an international experts' workshop on bridge scour. The workshop took place on 16-17 February 2015 and brought together experts from around the world with different perspectives and expertise in scour management or research. Through a formal expert elicitation process, the workshop will improve understanding of event and impact probabilities to better manage the risks from bridge scour related to flooding in infrastructure systems. The process considered rail bridges and also highway infrastructure, both in the UK and elsewhere in the world.

A workshop report and summary of key findings will form the basis of a journal paper which is planned for submission to Natural Hazards and Earth System Sciences (NHESS).

## 5.4 Historical chronologies of flash flooding

David Archer, supported by JBA Trust, and Hayley Fowler of Newcastle University published a paper about chronologies of historical flash floods derived from searches of newspaper archives and other sources commencing before 1800, along with recent gauged rainfall and stream flow data.

The paper includes five examples illustrating specific features of flash floods, which mostly happen on steep upland catchments, but can also occur on lowland catchments. A definition of flash floods from intense rainfall, relevant to British landscape and climate, is proposed.

The paper is available online: http://onlinelibrary.wiley.com/doi/10.1111/jfr3.12187/abstract

# 6 Sponsorship

JBA Trust aims to encourage more open access to research and information for both students and early career professionals.

## 6.1 JBA Trust Outstanding Paper Award

This year, the Trust sponsored an 'Outstanding Paper Award' in the Journal of Flood Risk Management to enable the paper to be made open access and shared with the flood risk management community.

The winning paper by C. Wobus, M. Lawson, R. Jones, J. Smith and J. Martinich entitled *"Estimating monetary damages from flooding in the United States under a changing climate"* was chosen from a total of thirty-one articles published in Volume 7.

This paper tackles an issue that is of prime importance to developing flood risk management policy. Under the current concerns of heightening flood risk and flood damages, the paper is an important contribution to assessment methodology and practice at the broadest scale in the US.

The authors examine the relationship between observed rainfall and flood damages totalled in 18 Water Resource Regions covering the whole of the US and then assess changes in rainfall and damage based on spatial and seasonal changes inferred from climate modelling.

The paper is freely available on the Journal of Flood Risk Management webpage on the Wiley Online Library.

# 7 Directors and Trustees

The Trustees serving during the year were as follows:

| | |
|---|---|
| Trustees | Rob Lamb, JBA (Managing Director) |
| | Jeremy Benn, JBA |
| | Jim Hall, Oxford University |
| | Keith Beven, Lancaster University |
| | Nick Russell, Independent financial consultant |
| Secretary | Craig Robson |

# 8 Structure, Governance and Management

JBA Trust is a company limited by guarantee and is governed by it Memorandum and Articles of Association. It was incorporated on 9 November 2011.

The trustees review the activities of JBA Trust every six months to ensure that they are focussed on supporting the purpose of the charity. The review also considers the strategic direction of the charity and considers how planned activities will contribute to public benefit.

We have referred to the guidance contained in the Charity Commission's general guidance on public benefit when reviewing our aims and objectives and in planning our future activities.

## 8.1 Appointment of Trustees

On incorporation of the JBA Trust, the Board of Trustees was appointed by invitation.

To preserve independence of the JBA Trust from JBA Group companies, which provide part of its core funding, the JBA Trust's Articles of Association stipulate that the number of trustees connected to or employed by JBA Group shall always be less than half of the total number of trustees appointed at any given time.

The Trustees are not remunerated (other than payment to cover travel and accommodation costs where required for JBA Trust business).

## 8.2 Trustee Induction and Training

The current Trustees were appointed in 2012 when the charity was first established and have been briefed on their legal obligations under charity and company law, updates to the Charity Commission's guidance on public benefit, the content of the Memorandum and Articles of Association and the JBA Trust business plan.

## 8.3 Organisation

The Board of Trustees meets every six months and is responsible for the strategic direction and policy of the charity. A Managing Director is appointed by the Trustees to manage the day-to day operations of the charity and is supported by a Programme Manager.

## 8.4 Risk Management

The trustees have a risk management strategy which comprises:

- An annual review of the risks the charity may face
- Policies and procedures in place to mitigate those risks
- Plans in place to minimise the impact of the risks should they materialise.

The principal risk to JBA Trust is financial sustainability. This is mitigated by having a robust reserves policy and a clear financial plan which is reviewed and subsequently approved by the trustees at the start of the financial year.

JBA Trust is governed by the same policies and procedures as the JBA Group. These include policies on: Health and Safety; Energy Use; Environment; Sustainability; Social Responsibility; Information Security: Equality and Diversity.

# 9 Financial Review

The principal funding source for JBA Trust is JBA Group dividends. JBA Trust also aims to leverage funding for research projects by applying for external funding from external organisations, for example Innovate UK or Research Councils. In 2014-15, JBA Trust set up an online donation page through 'MyDonate' to facilitate the receipt of donations from individuals and ensure that Gift Aid is claimed back efficiently.

## 9.1 Reserves Policy

Reserves are required to minimise the financial risks associated with the unlikely event of unplanned or unforeseen expenditure. As a newly established charity, JBA Trust is in the process of establishing research and education partnerships with a number of external organisations and consequently is slowly building up reserves.

The JBA Trust maintains sufficient reserves to cover all contractually committed expenditure or liabilities, and a contingency fund of minimum 5% of annual operating budget.

## 9.2 Plan for Future Periods

JBA Trust anticipates continued long term funding from JBA Group. To ensure that the charity maximises the value of its income in carrying out its activities, the strategic plan focuses on continuing to seek match funding for research projects from funding bodies, including Universities and Research Councils. In the future JBA Trust may also wish to generate an income by licensing datasets, results or models generated by research.

The trustees declare that they have approved the Trustees Report above

Signed on behalf of the trustees

Rob Lamb, Managing Director of JBA Trust 28 April 2016