



# Perth & Kinross

## Local Climate Impact Profile 2008

### Executive Summary





# Executive Summary

## INTRODUCTION

In order to develop its climate change strategy and to embed climate change mitigation and adaptation into its policies and activities, the Council needs to understand fully how climate change has, in the past, affected it by addressing the following key questions:






- How did the incident(s) affect council or community planning partners' services?
- Which particular services or community planning partners were affected?
- What were the financial costs of the event(s) or the responses to it?
- What are the consequences for the council's and community planning partners' strategic goals?
- Are there any guidelines on dealing with these sorts of events?
- Are the relevant weather variables (i.e. rain, flooding, heat) monitored by services when responding to an event? Are records kept centrally to be available to all?
- Have any extra provisions/resources been made available as a response to any of the incidents?
- Can the Council make alternative provisions?





Consequently, we were one of four Scottish Councils (the others being South Lanarkshire, Edinburgh City and Highland) who took part in a pilot to prepare a Local Climate Impact Profile (LCLIP). The LCLIP is seen as being the first step in increasing the awareness of local climate change and adaptation that is likely to be required in Perth & Kinross. The project uses past weather events identified through media reports to identify impacts and consequences. Key staff were interviewed to help verify the media reports and identify the response of various services within the Council and Community Planning Partners to the weather events. The participants in the research were chosen because of their experience in the delivery of services or planning for future levels of service.

Once all the articles had been recorded, the key weather events were identified. No formal selection process was developed, but the selection was undertaken by identifying the events with the most media coverage and secondly, getting a spectrum of weather events, in particular the inclusion of heat wave episodes. The consequences and the action taken at the time of the eight key weather events identified were summarised. The summary of the key weather events, including the findings of relevant council committee reports and the comparison of the event with historic met office data will be compiled and analysed in conjunction with the findings from the interviews conducted with the key personnel.

A summary of the key weather events is shown in the table below.

#### WEATHER EVENTS AND CONSEQUENCES

Date	Weather event	People affected	Services affected	Impacts on Council and CPPs			
				1	2	3	4
August 2003	 Heat wave	Not known	Housing & Community Care, Scottish Water, NHS Tayside	✓ □	✓	✓	✓
High temperatures damaged road surfaces, Blackwater and Lintrathen reservoirs affected. Impact on biodiversity due to incidences of blue green algae.							
August 2004	 Heavy Rain/Flooding	205+	The Environment Service, Tayside Police, Tayside Fire & Rescue, Scottish Water	✓	£££	✓	✓
Heavy rain and flooding cause disruption and damage to property and landslips resulting in closure of A9 and A85. Landslips and flooding also damaged habitats. Floods prevent some staff getting to work.							
January 2005	 Heavy Rain/Flooding/ High Wind	3500+	The Environment Service, Housing & Community Care, Network Rail, Tayside Fire & Rescue, Tayside Police	✓	£££	✓	✓
High winds and heavy rain caused rail and extensive road closures. High winds caused loss of electrical power to large parts of Perth & Kinross. Floods and road closures prevent some staff from getting to work.							
July 2005	 Heat wave	3+	Housing & Community Care, The Environment Service, Tayside Police, Network Rail, NHS Tayside, Tayside Fire & Rescue	✓	£	✓	✓
High temperatures led to a disruption in rail services and a significant rise in people presenting themselves to A&E with sunburn. A number of drownings due to low water temperatures and flows. Impact on biodiversity due to incidences of blue green algae. High temperatures also impacted on Council vehicle fleet.							
July 2006	 Heat wave	Not known	Housing & Community Care, The Environment Service, Tayside Police, Network Rail, NHS Tayside, Tayside Fire & Rescue	✓	£	✓	✓

Date	Weather event	People affected	Services affected	Impacts on Council and CPPs			
				1	2	3	4
A drowning due to low water temperatures and flows. NHS facilities needed additional cooling equipment.							
December 2006	 <b>Heavy Rain/ Flooding</b>  <b>Snow &amp; Ice</b>	542+	The Environment Service, Tayside Police, Network Rail, NHS Tayside, Tayside Fire & Rescue, Housing & Community Care, Scottish Water	✓	£££	✓	✓
Heavy rain and flooding caused extensive disruption to road and rail networks. A significant number of homes and businesses were affected by flooding. Floods and road closures prevent some staff from getting to work. Low temperatures resulting in freezing road surfaces led to a significant number of road traffic accidents.							
January 2007	 <b>Storm</b>	5000+	The Environment Service, Housing & Community Care	✓	£££	✓	✓
High winds and heavy rain caused cancellation or curtailment of New Year celebrations. High winds caused loss of electrical power to large parts of Perth & Kinross. Floods and road closures prevent some staff from getting to work.							
January 2008	 <b>Heavy Rain/ Flooding</b>	Not known	The Environment Service, Tayside Police, Tayside Fire & Rescue, Housing & Community Care	✓	£££	✓	✓
Heavy rain and flooding caused extensive disruption to road and rail networks. Floods and road closures prevent some staff from getting to work							

**Key**

1: Service delivery; 2 Capital and operational cost; 3 Employee time; 4 Reputation

**HEADLINES**

In summary the above table shows that:

- Flooding has been the most frequent cause of incidents having an impact on Council and Community Planning Partners delivery of services
- Heat waves have also been frequent and whilst not having the dramatic effects of flood events the potential consequences are many and some of the costs may be significant. In addition heat waves have the potential to have a significant impact on biodiversity

- A combination of low precipitation in winter and heat waves has led to potential difficulties with water supply and electricity generation
- A rough estimation of the costs of insurance claims, emergency response, road, rail and flood defence repairs directly attributable to weather events is in excess of £5 million pounds and over 12,000 people have been directly affected


#### **KEY MESSAGES FROM INTERVIEWS**

The analysis focuses on how the various services were impacted by the eight identified key weather events, individuals current perception of climate change, and where appropriate identify the best course of action to be adopted by the Council in responding to existing severe weather events and in preparing for the impacts of future weather events that are identified by the UKCIP08 climate models. The key messages from the interviews are:

1. Key personnel interviewed from both the Council and Community Planning Partners claimed to have witnessed first-hand (usually personally rather than professionally) evidence of changes in weather patterns and concern about vulnerability to weather was expressed by interviewees in all services and by Community Planning Partners particularly those dealing with operational, rather than strategic issues.
2. Council and Community Planning Partners responses' to common weather impacts are well defined, but impacts which are new or infrequent are responded to reactively, informally, 'learning by doing' is common.
3. Monitoring of weather variables and/or their impacts is patchy or nonexistent. The only example is the ice alert system for roads. There is no assessment of weather effects on the Council's or Community Planning Partners strategic goals.
4. If the true impact of severe weather is to be quantified and managed effectively staff time and costs spent on responding to weather events need to be recorded or recorded more effectively.

#### **CONCLUSIONS**

During the process of completing the project it was evident that there was a general understanding amongst services of the effect the weather can have on their respective service. However there was a lack of recording mechanisms in place for the exposure of impacts from severe weather. In addition to this, it was apparent that



some services exhibited an ignorance / disinclination respond effectively to the impacts of severe weather. The risk of severe weather affecting the local authority in general is clearly apparent, reducing the potential risk and inevitable impact cannot be managed without being assessed and quantified.

### ***Implications of the research***

The overriding requirement for the future is to link the LCLIP more directly to the Council's sustainable development objectives and to avoid the effects of climate change and to adapt to its consequences. This research makes the first step in that process.

### ***Improving current practice***

Future work could lead to the establishment of indicative thresholds and trigger levels. Identifying thresholds could assist in reducing the impact of severe weather events, with the potential (once trigger levels are established) for a more proactive emergency response rather than the more historical reactive delivery. At the present time Council-wide business continuity planning is at best in its infancy and some Community Planning Partners have also identified this as an area for improvement.

There is also a need to record both severe weather events and the impact on service delivery but also the economic costs of weather events both within the Council and its Community Planning Partners.

### ***Further work***

Time and resource constraints prevented the researcher from interviewing all of those with experience of responding to severe weather events within the Council and its Community Planning partners. More time would have allowed a fuller understanding of the potential use and role for the LCLIP in the plan and decision-making process.

In conclusion the Local Climate Impact Profile project has provided a platform to monitor current vulnerabilities to local weather, allowed the sharing of information across the Council and Community Planning Partners in an accessible format, and identified current good practice and weaknesses in responses. In the longer term this work will provide the basis for more extensive information and monitoring system and links into future decision-making by the Council.

