

Rescuing Ireland's Climate and Rainfall Data

Mary Curley, **Seamus Walsh**, Conor Daly, Conor Lally, Tom Murphy, Ciara Ryan, Conor Murphy, Gerry Brady, Paul McElvaney, Dimitri Cernize, Carla Mateus, Aaron Potito



Rescuing Ireland's Climate and Rainfall Data

- Most Pre 1961 records are held in manuscripts in the Met Éireann
- Estimated at least 20 person years will be needed to rescue all data



Three Data Rescue initiatives are underway:

1. Rainfall Involving 3rd level students in Maynooth University
“Integrating Data Rescue into the classroom”
2. Maximum and Minimum Temperature Data Rescue at Galway University (NUIG)
3. Full climate journals with the Central Statistics Office

Data Rescue: Integrating Data Rescue into the Classroom

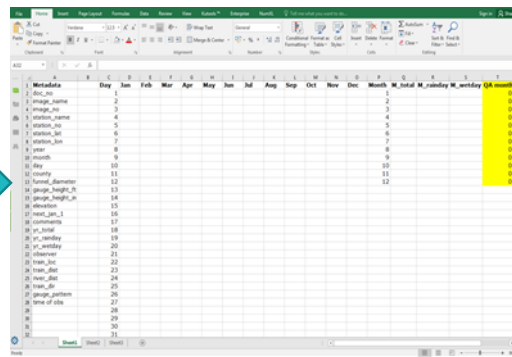
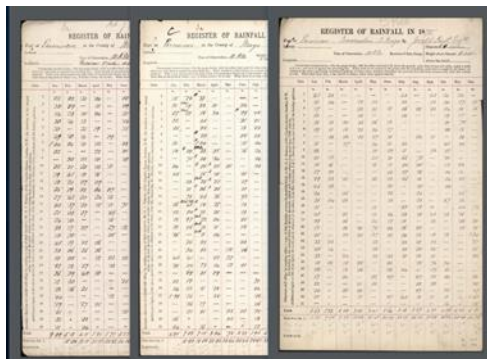
An Award winning Project in Collaboration between Met Éireann and Maynooth University, PhD student partly funded by Irish Research Council



Data Rescue: Integrating Data Rescue into the Classroom

Part of third year Geography curriculum

- Students given Presentation from Met Éireann to convey the scientific, cultural and social importance of the data.
- Images assigned to students via Dropbox along with templates provided by Met Éireann for transcribing the data.
- Each sheet was assigned twice – double keyed.
- Access to 274 sheets previously transcribed (single keyed) by Met Éireann.



Data Rescue: Integrating Data Rescue into the Classroom

Data Rescue: (phase 1~1300 annual rainfall sheets)

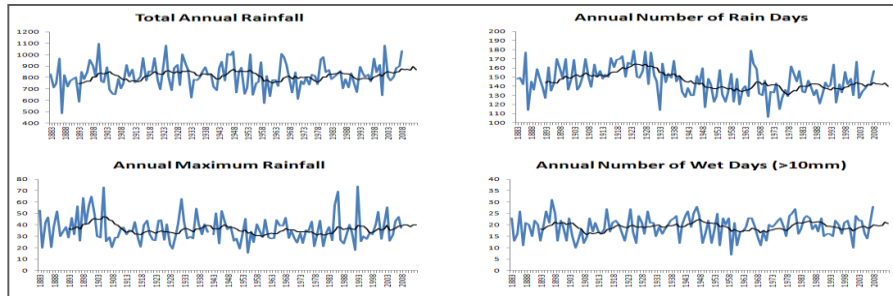


Data Rescue: Integrating Data Rescue into the Classroom

The student experience

Supports were developed to assist the process:

- Video tutorial
- Discussion Forum
- QA check
- Group Discussion



Feedback from the students: 80% stated that they would prefer to participate in assignments like this over other, more traditional, assignments.

Data Rescue: Integrating Data Rescue into the Classroom

Data Rescue: Summary and Ongoing work

- To date over 3000 annual rainfall sheets and associated metadata transcribed by students.

- Hosted by the World Meteorological Organization as a best practice in data rescue.

- https://library.wmo.int/doc_num.php?ex=lcldoc&doc_id=2017-0147

- The data will be available through the recently awarded Service Global Land and Marine (SGLM) project.

- June 2018 Paper and Supplement: Integrating data rescue into the classroom
DOI: 10.1175/BAMS-D-17-0147



LOGIN JOIN

Search the Site

JOURNALS ONLINE

Journals

Publish

[Home](#) > [BAMS](#) > [Early Online Releases](#) > Integrating data rescue into the classroom

< Previous Article

Next Article >

Integrating data rescue into the classroom

Ciara Ryan^{1,2}, Catriona Duffy¹, Ciaran Broderick¹, Peter W. Thorne¹, Mary Curley², Séamus Walsh², Conor Daly², Mairéad Treanor^{3,4}, and Conor Murphy¹

¹ Irish Climate Analysis and Research Units, Department of Geography, Maynooth University, Maynooth, Co. Kildare, Ireland.

² Climatology and Observations Division, Met Éireann, Dublin, Ireland.

³ Library, Met Éireann, Dublin, Ireland.

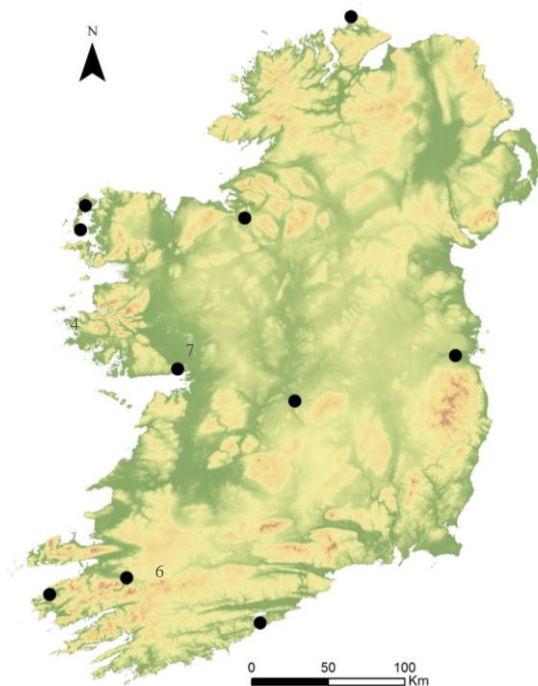
⁴ The Oireachtas Library, Houses of the Oireachtas, Dublin, Ireland.

<https://doi.org/10.1175/BAMS-D-17-0147.1>

Published Online: 12 June 2018

2 Rescuing Long-term Maximum and Minimum Air Temperature Series

A PhD research project in Collaboration between Met Éireann and Galway University, Carla Mateus



- 1- 3 - Botanic Gardens Dublin (1848 – 1957).
- 4 - NUI Galway (1861 – 1952).
- 5 - Fitzwilliam Square Dublin (1871 – 1937).
- 6 - Roches Point (1872 – 1956).
- 7 - Birr Castle Observatory (1872 – 1954).
- 8 - Valentia (1872 – 1943).
- 9 - Markree Castle Observatory (1874 – 1968).
- 10 - Killarney (1881 – 1898, 1920 – 1933).
- 11 - Belmullet (1884 – 1899).
- 12 - Blacksod Point (1900 – 1956).
- 13 - Malin Head (1885 – 1955).

2 Rescuing Long-term Maximum and Minimum Air Temperature Series

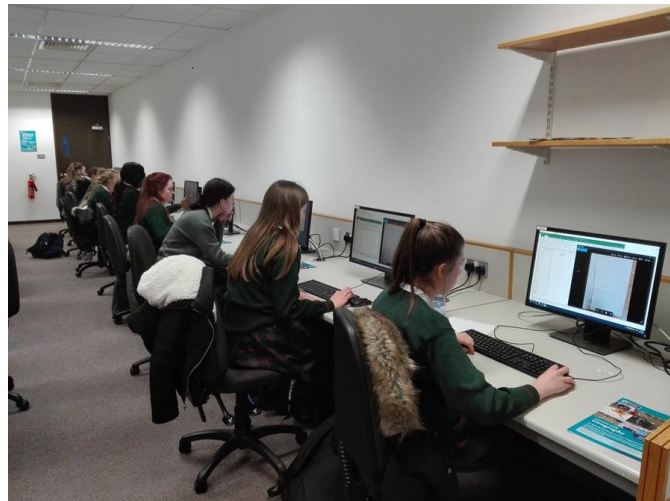
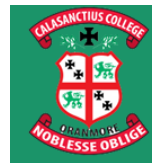
Data Entry – Double Keying

- NUIG volunteering students
- ALIVE program (A Learning Initiative and the Volunteering Experience)
- Irish Meteorological Society volunteers
- NUIG Geography undergrad students (200 students)
- Transition Year Students (over 150 High school students, mainly 15 and 16 years old)



2 Rescuing Long-term Maximum and Minimum Air Temperature Series

Transition Year Work Placement Training



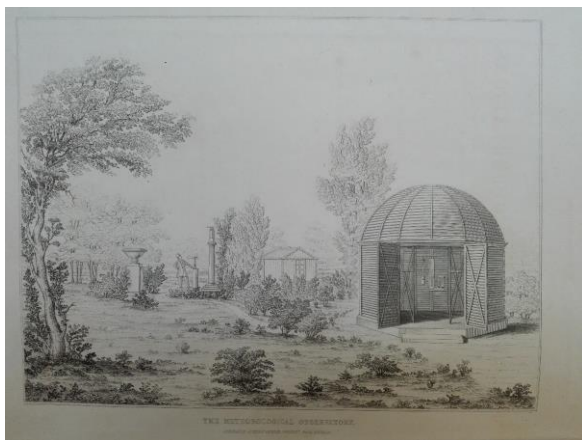
2 Rescuing Long-term Maximum and Minimum Air Temperature Series

Summary Current and Planned Work :

- Data rescue and keying is completed, journal paper in preparation
- Data Quality Control and Homogenisation – Under way
- Data trend analysis will then be undertaken
- All data will be made public

3 Rescuing Full Weather Journals

Phoenix Park (Dublin) observing station



Then.....



..... And Now

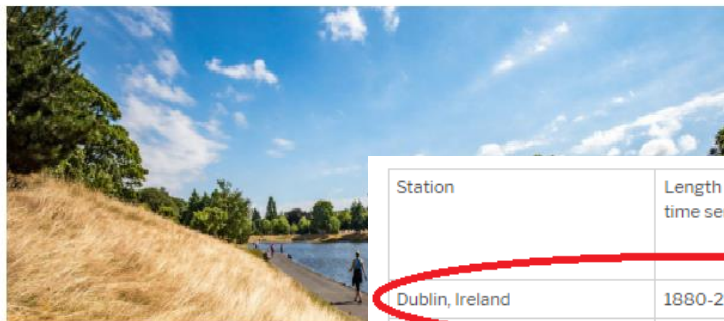
3 Rescuing Full Weather Journals



world weather attribution



Home About Analyses News Projects Resources



Home > Heatwave > Heatwave in northern Europe, summer 2018

Heatwave in northern Europe, summer 2018

28 July, 2018

HEATWAVE
EUROPE

The summer of 2018 has been remarkable in not high-pressure anomaly over Scandinavia caused and drought there from May to (at least) July.

Station	Length of time series	Observed or forecast value (Celsius)	Return period in current climate (yr)
Dublin, Ireland	1880-2018	26.5	8 (4...15)
De Bilt, Netherlands	1900-2018	33.6	5 (3...9)
Copenhagen, Denmark	1874-2018	30.9	7 (4...19)
Oslo, Norway	1937-2018	31.2	8 (3...30)
Linköping, Sweden	1931-2018	32.2	30 (10...200)
Sodankylä, northern Finland	1908-2018	31.9	>90 yr
Jokioinen, southern Finland	1957-2018	32.1	140 (>16)

3 Rescuing Full Weather Journals

- Manuscripts sent by Met Éireann to external company for scanning
- Images sent to CSO for keying
- Designed excel templates to mirror scanned images
- Scanned image double keyed
- Monthly excel file read into SAS and checked by CSO
- Further checking of keyed month (text data and time series)
- Time-series of all years created by CSO
- Data returned to Met Éireann in one tab-delimited file
- Monthly excel files will be made available to Met Éireann

3 Rescuing Full Weather Journals

Meteorological Observations at <u>Phoenix Park</u> County <u>Dublin</u>		A	B	C	D	E	F	G	H	I	J	K	
Month <u>January</u> 1955. Greenwich Time. Railway at Post Office Time		1 Meteorological Observations at Phoenix Park County Dublin						Greenwich Time		Railway or Post Office Time			
Station of Observations		2 Month January 1955						I: 09:00h		II: 21:00h			
Number of Observations		3 Hours of Observations						I: 09:00h		II: 21:00h			
Day		4 Attached Thermometer and Barometer as read in inches or milibars						Air Pressure at Mean Sea Level in the Units of Measurement		In Screen			
Numbers of Columns		Degrees		In. or mb.		Degrees		In. or mb.		Dry		Wet	
		I		II		I		II		I		II	
		1		2		3		4		5		6	
		7		8		9		10		11		12	
		13		14		15		16		17		18	
		19		20		21		22		23		24	
		25		26		27		28		29		30	
		31		32		33		34		35		36	
		37		38		39		40		41		42	
		43		44		45		46		47		48	
		49		50		51		52		53		54	
		55		56		57		58		59		60	
		61		62		63		64		65		66	
		67		68		69		70		71		72	
		73		74		75		76		77		78	
		79		80		81		82		83		84	
		85		86		87		88		89		90	
		91		92		93		94		95		96	
		97		98		99		100		101		102	
		103		104		105		106		107		108	
		109		110		111		112		113		114	
		115		116		117		118		119		120	
		121		122		123		124		125		126	
		127		128		129		130		131		132	
		133		134		135		136		137		138	
		139		140		141		142		143		144	
		145		146		147		148		149		150	
		151		152		153		154		155		156	
		157		158		159		160		161		162	
		163		164		165		166		167		168	
		169		170		171		172		173		174	
		175		176		177		178		179		180	
		181		182		183		184		185		186	
		187		188		189		190		191		192	
		193		194		195		196		197		198	
		199		200		201		202		203		204	
		205		206		207		208		209		210	
		211		212		213		214		215		216	
		217		218		219		220		221		222	
		223		224		225		226		227		228	
		229		230		231		232		233		234	
		235		236		237		238		239		240	
		241		242		243		244		245		246	
		247		248		249		250		251		252	
		253		254		255		256		257		258	
		259		260		261		262		263		264	
		265		266		267		268		269		270	
		271		272		273		274		275		276	
		277		278		279		280		281		282	
		283		284		285		286		287		288	
		289		290		291		292		293		294	
		295		296		297		298		299		300	
		301		302		303		304		305		306	
		307		308		309		310		311		312	
		313		314		315		316		317		318	
		319		320		321		322		323		324	
		325		326		327		328		329		330	
		331		332		333		334		335		336	
		337		338		339		340		341		342	
		343		344		345		346		347		348	
		349		350		351		352		353		354	
		355		356		357		358		359		360	
		361		362		363		364		365		366	
		367		368		369		370		371		372	
		373		374		375		376		377		378	
		379		380		381		382		383		384	
		385		386		387		388		389		390	
		391		392		393		394		395		396	
		397		398		399		400		401		402	
		403		404		405		406		407		408	
		409		410		411		412		413		414	
		415		416		417		418		419		420	
		421		422		423		424		425		426	
		427		428		429		430		431		432	
		433		434		435		436		437		438	
		439		440		441		442		443		444	
		445		446		447		448		449		450	
		451		452		453		454		455		456	
		457		458		459		460		461		462	
		463		464		465		466		467		468	
		469		470		471		472		473		474	
		475		476		477		478		479		480	
		481		482		483		484		485		486	
		487		488		489		490		491		492	
		493		494		495		496		497		498	
		499		500		501		502		503		504	
		505		506		507		508		509		510	
		511		512		513		514		515		516	
		517		518		519		520		521		522	
		523		524		525		526		527		528	
		529		530		531		532		533		534	
		535		536		537		538		539		540	
		541		542		543		544		545		546	
		547		548		549		550		551		552	
		553		554		555		556		557		558	
		559		560		561		562		563		564	
		565		566		567		568		569		570	
		571		572		573		574		575		576	
		577		578		579		580		581		582	
		583		584		585		586		587		588	
		589		590		591		592		593		594	
		595		596		597		598		599		600	
		601		602		603		604		605		606	
		607		608		609		610		611		612	
		613		614		615		616		617		618	
		619		620		621		622		623		624	
		625		626		627		628		629		630	
		631		632		633		634		635		636	
		637		638		639		640		641		642	
		643		644		645		646		647		648	
		649		650		651		652		653		654	
		655		656		657		658		659		660	
		661		662		663		664		665		666	
		667		668		669		670		671		672	
		673		674		675		676		677		678	
		679		680		681		682		683		684	
		685		686		687		688		689		690	
		691		692		693		694		695		696	
		697		698		699		700		701		702	
		703		704		705		706		707		708	
		709		710		711		712		713		714	
		715		716		717		718		719		720	
		721		722		723		724		725		726	
		727		728		729		730		731		732	
		733		734		735		736		737		738	
		739		740		741		742		743		744	
		745		746		747		748		749		750	
		751		752		753		754		755		756	
		757		758		759		760		761		762	
		763		764		765		766		767		768	
		769		770		771		772		773		774	
		775		776		777		778		779		780	
		781		782		783		784		785		786	
		787		788		789		790		791		792	
		793		794		795		796		797		798	
		799		800		801		802		803		804	
		805		806		807		808		809		810	
		811		812		813		814		815		816	
		817		818		819		820		821		822	
		823		824		825		826		827		828	
		829		830		831		832		833		834	
		835		836		837		838		839		840	
		841		842		843		844		845		846	
		847		848		849		850		851		852	
		853		854		855		856		857		858	
		859		860		861		862		863		864	
		865		866		867		868		869		870	
		871		872		873		874		875		876	
		877		878		879		880		881		882	
		883		884		885		886		887		888	
		889		890		891		892		893		894	
		895		896		897		898		899		900	
		901		902		903		904		905		906	
		907		908		909		910		911		912	
		913		914		915		916		917		918	
		919		920		921		922		923		924	
		925		926		927		928		929		930	
		931		932		933		934					

3 Rescuing Full Weather Journals

Progress this year

- Data rescue was initially carried out by two staff members, with occasional help around 20 internal volunteers.
- 2 years of data was keyed before it was determined that progress was slow and full time temporary clerical staff was required.

Currently, 10 people are working full time on keying weather data, with 2 further internal volunteers continuing to frequently help in the keying process.

- It takes approximately 6 hours to rescue station month
- 120 years by 12 months by 6 hours = 8,640 person hours for Phoenix Park!

Last Slide

Lessons learned

Data Rescue is a labour intensive activity, but even a slow start is worth undertaking.

Management time is significant and should not be underestimated.

Always interesting and sometimes surprising!

THE TEMPERATURE IN JULY.

It is well known that popular opinion usually magnifies present events, and we expect each severe frost, heavy gale, or violent thunderstorm to be considered by the public at large as unprecedented. The attention devoted to the heat of the present summer seems to us, as far as relates to absolute maxima, rather excessive. We shall show

July 1876! Plus ça change