University of East Anglia

Information Services
Directorate

Library
University of East Anglia
Norwich NR4 7TJ
United Kingdom

Email: foi@uea.ac.uk
Tel: +44 (0) 1603 593 523
Fax: +44 (0) 1603 591 010

Web: http://www.uea.ac.uk

Mr. Stephen McIntyre

18 July 2011

Dear Mr McIntyre

ENVIRONMENTAL INFORMATION REGULATIONS 2004 – INFORMATION REQUEST (FOI_11-047; EIR_11-004)

The appeal you have made of our handling of your original request of 28 February 2011 made under Environmental Information Regulations (our reference EIR_11-004) has been passed to me for review under the University's appeal process as described in our code of practice[1].

I have noted the concerns that you have raised about the way that we interpreted your request and the clarification that you have provided in your appeal.

> *You "interpreted" my request as being for the 1001 bootstrap samples referred to, elsewhere in the email. If I wanted to request the 1001 bootstrap samples, I would have done so. I did not. I asked for the regional chronology, not the 1001 bootstrap samples and hereby re-iterate the request:*
>
> *the "URALS regional chronology" referred to in email 1146252894.txt, where it is described as a chronology consisting of "the Yamal and Polar Urals long chronologies, plus other shorter ones."*

The phrase "URALS regional chronology" does not appear in email 1146252894.txt, nor does it appear in your original request, but this is helpful to me in trying to determine what information you are actually seeking. Your request is based on information in an illegally obtained email that was not written as a public document and therefore I have asked Dr Osborn as the author of the email to explain what his email was referring to, his response is below:

> *It is worth clarifying here that although the original email described "Yamal and Polar Urals chronologies" the intended meaning was "trees from the sites that have previously been used to construct long chronologies called Yamal and Polar Urals, plus other shorter ones." Thus it was not referring to chronologies but to groups of trees. The wording in the email may have led*

[1] www.uea.ac.uk/is/strategies/infregs/FOIA+Code+of+Practice+for+Responding+to+Requests

the requester to believe that new chronologies for Yamal and Polar Urals had been produced at that time.

The email you refer to is ambiguous and as Mr Palmer observed in his response "No such composite was attached to or identified by the 2006 email". The fact that the email does not identify a composite makes it difficult for me to determine what information you are actually requesting.

On this point in your appeal you have said:

> *You state that the requested chronology was not attached to the email. This is irrelevant to my request. Dr Osborn knew what he was referring to in the email and is in a position to identify the chronology in question.*

As you have observed, Dr Osborn, as the author of the email, is best placed to identify the chronology that you have requested. As part of considering your appeal Dr Osborn has provided me with the following information which is pertinent to our assumption that your request was for the 1,001 bootstraps:

> *The requester is incorrect: it <u>is</u> relevant that no data were attached to the email and although I <u>do</u> know what I was referring to in the email, this does not necessarily mean that I can identify the requested chronology.*
>
> *UEA's response noted that "No such composite was attached to or identified by the 2006 email". The requester has selected just one half of this statement to support his criticism, but in fact both elements must be considered together to come to a fair evaluation of their relevance.*
>
> *The original request is ambiguous for two reasons.*
>
> *Firstly, the email identified as 1146252894.txt refers to groups of trees, to temperature data from the regions where the trees were sampled, and to a future plan to process the measurement data from the groups of trees to produce proxy series and many bootstrap estimates of these series. It is only an inference that a regional chronology was later produced for the URALS group of trees. Our initial search for information relevant to this request suggested that this inference was false.*
>
> *Second, the email was discussing ongoing work, which began in 2005, continued through 2006 and 2007, and to which we have recently returned. During that work, we have produced a number of different regional chronologies for the 'greater Urals' region involving multiple methods of selecting, processing and aggregating the measurement data. Some of these regional chronologies have been retained and some have not. The only identification of the requested information is from email 1146252894.txt, but because this only refers to future plans to produce a regional chronology from the URALS group of trees, this is not a unique identification of which – if any – of our working files might contain the requested information. Had the requester asked for a regional chronology that had actually been published, then identification would have been more straightforward because the request could have asked for the specific published version. Similarly, had Dr Osborn attached a specific version to the email 1146252894.txt then this would also have provided a unique identification of the information being requested. That is why it is relevant that no data were attached to the email, because attached data would have avoided this ambiguity in identifying the requested information.*

In your appeal you have clarified that you are seeking the URALS regional chronology, unfortunately there remains some ambiguity because the email refers to a future plan to produce such a chronology rather than to a chronology that had already been produced. Dr Osborn has explained to me that:

> *Regional chronologies have subsequently been produced from various data in the 'greater Urals' area of northern Siberia, and one of those might be based on the URALS group of trees referred to in the email.*

Dr Osborn has provided the following further information on the approach he took in trying to locate whether the information you requested was held by us:

> *Although the request is (unavoidably) ambiguous with regard to which – if any – of our working files might contain the requested information, we did undertake a search for material that might match the request. We did not identify a file containing a single non-bootstrap regional chronology, and could not recollect that such a regional chronology had been produced from the group of trees identified as URALS in email 1146252894.txt. We did, however, identify a file that we believed to contain 1001 bootstrap estimates of a regional chronology derived from a URALS group of trees that were produced a few weeks* ***after*** *email 1146252894.txt was sent (note that this is deliberately described as "a" URALS group of trees rather than "the" URALS group of trees, since the definition of which group of trees form the basis for a regional chronology for this region has evolved over the course of this research).*
>
> *The decision to proceed with the interpretation that the set of 1,001 bootstrap estimates of a regional chronology was the closest match to what had been requested was made purely in an attempt to be helpful to the requester and because the requester may not have been able to clarify his request anyway, given that the information that he sought does not have any precise identification.*

In investigating your appeal a further search has been undertaken and it has become clear that the first time series out of the 1001 bootstraps is actually a single (non-bootstrap) chronology. However the ambiguity that remains around your request means that I cannot be certain that this single chronology is the one that you are requesting, nonetheless in absence of any other chronology I will assume that this is the one that you seek.

Mr. Palmer's response considered the release of all 1001 time series including the first time series which we now recognise as being a single chronology. In his response Mr Palmer has cited regulation 12(4)(d) and 12(5)(c) and I will now go on to consider these.

Regulation 12(4)(d) – Material in the course of completion.

In their research Dr Osborn and his colleagues are working on the scientific problem of identifying satisfactory scientific methods to process various (tree-ring) proxy data that are subject to various sampling biases and other influences upon their annual growth. A very important part of this work is the exploration of different aspects of statistical confidence associated with various tree-ring (composite) chronologies themselves and their interpretation in terms of inferred climate variability.

The text of the stolen email shows that the aggregation and processing of data for the greater Urals region was being proposed as part of ongoing research and discussion about the representation and assessment of uncertainty: in tree-ring

chronologies themselves and with regard to their value as indicators of regional temperature change. The production of the particular aggregate or composite chronology (i.e. for which the bootstrapped series were to be produced) was not being proposed as one likely to represent a reliable, or the most reliable, indication of tree-growth changes over the second millennium CE. The production of the series was merely being suggested as one possible aggregation of regional data that would offer insight when investigating the methods of regional chronology production and aspects of associated statistical uncertainty. As such, while Dr Osborn and his colleagues do not necessarily view this particular composite as an optimum regional chronology, they do consider it an integral part of their ongoing exploration of this issue and intend to include it in the publication of this research. This publication will include details of the methods used to produce this and alternative series for the region, and will discuss their uncertainties. The composite that I believe you have requested is, therefore, one of a suite of composite chronologies that are being used as part of a current research project. This research project is due for completion in October 2012 and the requested information will be made available in finished form at the time of publication of the results which is expected to be no later than October 2012.

As part of this research some composites may be created that are sub-optimal and these need to be explained. We maintain[2] that a completed composite is not just a series of data but also includes the associated metadata descriptors; this would include formal written explanation of how the composite was derived along with a candid critique of its value. In this sense the composite that you have requested is not complete.

I agree that Mr Palmer's application of regulation 12(4)(d) is appropriate that the composite is not at this stage complete.

Regulation 12(5)(c) – Adverse effect on intellectual property rights.

I believe that the arguments put forward in Mr. Palmer's response are accurate and constitute a valid application of this regulation.

In your appeal you have flagged the ICO guidance that regulation 12(5)(c) is engaged only if you can show that the disclosure "would adversely affect … intellectual property rights". ICO Guidance No 20 requires you to show that the alleged harm is "at least probable rather than merely likely"

Mr Palmer stated that

> *"The 'adverse affect' to intellectual property rights is based upon the fact that release of these data sets and the methodology used in their construction would, effectively, be publication of the creative work of the CRU staff. This would seriously reduce the likelihood that any high impact journal would publish the results pertaining to this work, thus effectively causing the University financial harm via adverse impact upon reputation, ability to attract*

[2] Support for our position is provided by considering previous practice in the field. While not universal, good practice is to provide associated metadata and explanation. For example, chronologies published at the ITRDB usually include the chronology series, the raw measurements, cross-dating metadata (e.g. http://www.ncdc.noaa.gov/paleo/metadata/noaa-tree-2811.html), together with the standardisation metadata (for the same example chronology ftp://ftp.ncdc.noaa.gov/pub/data/paleo/treering/updates/schweingruber/chronologies/id007/id007w_out.txt). Additionally, the publication of chronologies in the peer-review literature have been accompanied by a broad presentation of the chronology production, interpretation and limitations (e.g. Briffa et al., 1996, among many others).

research funding, and funding arising from the citation of the publications within the REF process by which universities in the United Kingdom receive funding based on the quality of research undertaken."

As evidence that this potential harm is probable, here is an extract from the information for authors provided by the scientific journal *Science*, which is one of the most prestigious journals in this area of research and in which we have previously published and plan to publish our future work:

> ***"Prior publication*** Science *will not consider any paper or component of a paper that has been published or is under consideration for publication elsewhere. Distribution on the Internet may be considered prior publication and may compromise the originality of the paper as a submission to* Science*. Please contact the editors with questions regarding allowable postings."*[3]

Key components of this work and of this paper that will describe the work include the selection method, the outcome of the selection method, the processing methods, and the final chronology obtained. Prior distribution of these components on the internet would jeopardise the acceptance of the work for publication by a high impact journal such as Science.

As previously stated I agree that Mr Palmer's application of regulation 12(5)(c) is appropriate.

Part 2 of your request – A list of all the measurement data sets used to make this URALS composite, including the ITRDB identifier or equivalent.

The websites that Mr. Palmer cited do indeed provide access to the entire tree ring data used to create the Urals composite. Dr Osborn has explained this:

> *Without the site identifiers, selecting data from the sites noted above on the basis of the geographical domain that was provided in our response ("domain bounded by 45°E and 75°E and north of 60°N") would result in the data we were using in 2006 plus a few additional sites that we were not using.*

Without the ITRDB (or other) identifiers it is not possible for you to identify the exact sites used to create the composite and I agree with you that the data is not easily accessible. Therefore I do not agree that Mr. Palmer's application of regulation 6(1)(b) is appropriate.

Mr. Palmer has also cited regulation 12(4)(d), that some of the requested information is incomplete. This, as you point out, is similar to the argument made by Queen's University Belfast and was rejected by the ICO on appeal. I do not agree with Mr. Palmer's application of the regulation 12(4)(d) in relation to the tree ring data sets.

As previously stated the URALS composite is one of suite of composites that is being used by Dr Osborn to compare sampling methodologies as part of an ongoing research project that will attempt to determine the optimum methodology for creating a regional chronology. Central to this work is how sites are selected and which sites are used in the chronologies and it is the selection and processing methodologies over which we maintain we have intellectual property rights as outlined in Mr Palmer's response. Release of the data set used in this work would de facto release information about the sampling methodology and would impinge our intellectual

[3] http://www.sciencemag.org/site/feature/contribinfo/prep/gen_info.xhtml

property rights. I am therefore upholding Mr. Palmer's application of regulation 12(5)(c).

Part 3 of your request – A list of the measurement data sets used to make the Polar Urals long chronology, including the ITRDB identifier or equivalent.

Dr Osborn has explained that no new long chronology for the Polar Urals was produced for the work described in his 2006 email, and the intended meaning of his email was (as noted earlier) to refer to "trees from the sites that have previously been used to construct long chronologies called Yamal and Polar Urals". For the Polar Urals, Dr Osborn has now made it clear that he was referring to the long ring-width chronology used in the publications of Briffa et al. (1995, 1996)[4].

In light of this clarification from Dr Osborn, it is now apparent that the Polar Urals long chronology has already been published and, therefore, Mr. Palmer's application of regulations 12(4)(d) and 12(5)(c) no longer holds because the requested information is neither incomplete nor would its release adversely affect our intellectual property rights.

We are now releasing a list of the sample identifiers used to produce the ring-width chronology known as Polar Urals described in Briffa et al. (1995, 1996) and the information is included as an appendix to this reply. These publications give details of how various chronologies were produced using these data and include a discussion of the issues, limitations and uncertainties inherent in interpreting them as evidence of climate change, particularly for long-timescale changes. We intend to publish a future paper that will describe reanalyses of these and additional data for the Polar Urals area.

Public interest

You have asked that I provide specific consideration of the following factors in favour of disclosure:

1. Furthering the understanding of and participation in the public debate of issues of the day.

We agree that climate change is an "issue of the day", however the release of unfinished scientific work, which lacks an adequate description of the manner of production, which has been superseded by improved approaches (and for which a full publication of methods, results and data is planned for 2012 at the latest), will not result in "Furthering the understanding of and participation in the public debate of issues of the day". The debate of the climate change issue would not be more informed by the release of unfinished scientific work for which a full publication of methods, results and data is planned for 2012 or earlier.

2. Promoting accountability and transparency of public authorities and decisions taken by them.

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[4] Briffa, K.R., Jones, P.D., Schweingruber, F.H., Karlén, W., & Shiyatov, S.G. (1996). Tree-ring variables as proxy-climate indicators: Problems with low frequency signals. In Climatic Variations and Forcing Mechanisms of the Last 2000 Years (ed. by P.D. Jones, R.S. Bradley & J. Jouzel), pp. 9-41. Springer-Verlag, Berlin.

Briffa, K.R., Jones, P.D., Schweingruber, F.H., Shiyatov, S.G., & Cook, E.R. (1995) Unusual 20th-Century Summer Warmth in a 1,000-Year Temperature Record from Siberia. Nature, 376, 156-159.

Accountability and transparency will be promoted by the publication of Dr Osborn's research when it is complete and by our contemporaneous release of data and methodology employed.

3. The disclosure of information may contribute towards scientific advancements

The disclosure of unfinished scientific work, which lacks an adequate description of the manner of production, will not contribute towards scientific advancement. This can only occur with a full description of the scientific work, the methodology employed, the caveats, the results and their interpretation. The requirement for such a process was explicitly noted in one of the recommendations of the Muir Russell report as follows:

> *"We note that much of the challenge to CRU's work has not always followed the conventional scientific method of checking and seeking to falsify conclusions or offering alternative hypotheses for peer review and publication. We believe this is necessary if science is to move on, and we hope that all those involved on all sides of the climate science debate will adopt this approach."*

4. Promoting accountability and transparency

The requested information does not include any reasoned explanations of the methodology used in the selection, and thus releasing it at this stage will not meet the requirement of promoting accountability and transparency. Reasoned explanations for decisions made will be included as part of publication when the work is complete.

I have reviewed Mr. Palmer's consideration of the public interest and agree with the arguments therein. Specifically, Mr. Palmer is not arguing that the requested information is too complicated to be readily understood; rather, he is contending that the information, absent of a description of how it was created is incomplete. It is our intention to put the requested information in proper context by completing the work, publishing a description of its basis, and making the data public in 2012 at the latest.

Mr Palmer's statement about the willingness and ability of academics to engage in published research does require some additional clarification. Academics must be free to follow the research process, including the creation of intermediate results, drafts of work, development of alternative methods of processing and analysing data, as the pathway toward publishing their findings and contributing to advancement of scientific knowledge. They need to be free to do this without the need to defend intermediate work that is still ongoing, and they need to be free to publish their work in high-impact journals without this opportunity being damaged by prior release of material that goes against the journal policy.

Having considered the Public Interest arguments both in favour and against release of the requested information I believe that the overwhelming argument in this instance is against release of the requested information.

As noted earlier there remains some ambiguity about the information you are actually requesting and I am concerned that as a result I may not have dealt with your request appropriately. I have tried to be as candid as I can in my response about what information we hold that may meet the terms of your request and if on reflection there is any further information that you are able to provide by way of clarification then I would be happy to consider this as part of the appeal process or alternatively as a new request. However if you are able to confirm that I have interpreted your request correctly then I believe that it would be appropriate at this stage to consider this to be our final position on the internal review of this matter, and would advise that

if you are dissatisfied with this response, you should now exercise your right of appeal to the Information Commissioner at:

Information Commissioner's Office
Wycliffe House
Water Lane
Wilmslow
Cheshire SK9 5AF
Telephone: 0303 123 1113
Website: www.ico.gov.uk

Please quote our reference given at the head of this letter in all correspondence

Yours,
Jonathan Colam-French

Appendix - Tree ring-width measurement data for the Briffa et al. (1995, 1996) Polar Urals long chronology

The identifier for this group of tree measurement data (site) that we use is "POU_LA". The ITRDB identify this group/site as "Schweingruber - Polar Ural (historisch) - LASI - ITRDB RUSS021"

Information about the group/site is available at the ITRDB here:

http://www.ncdc.noaa.gov/paleo/metadata/noaa-tree-4597.html

The tree ring-width measurement data are available at the ITRDB here:

ftp://ftp.ncdc.noaa.gov/pub/data/paleo/treering/updates/wsl/raw-data/singles/pou_la.hbr

The identifiers of the individual tree cores that we use are:

POU_LA - List of core names

862010H 862020H 862030H 862040H 862050H 862060H 862070H 862080H
862090H 862100H 862110H 862120H 862130H 862140H 862150H 862160H
862170H 862180H 862190H 862200H 862210H 862220H 862230H 862240H
862250H 862260H 862270H 862280H 862300H 862310H 862320H 862330H
862340H 862350H 862360H 862370H 862380H 862390H 862400H 862410H
862450H 862460H 862470H 862481H 862482H 862491H 862492H 862500H
862510H 862530H 862540H 862560H 862141 862142 862152
862161 862162 862171 862172 862181
862182 862191 862201 862202 862212
862221 862222 862231 862232 862241
862242 862381 862382 862391 862392
862401 862402 862411 862412 862422
862431 862432 862441 862442 862451
862452 862461 862462 862471 862472
862481 862482 862490