Literature list

Visualizing Climate Change (2020)

7.5 ECTS Credits

Single Subject course within the
Master's programme in
Science for Sustainable Development

MANDATORY LITERATURE

Week 39

- Christa Kelleher, Thorsten Wagener (2011). Ten guidelines for effective data visualization in scientific publications. Environmental Modelling & Software, Volume 26, Issue 6, 2011, Pages 822-827, ISSN 1364-8152, https://doi.org/10.1016/j.envsoft.2010.12.006.
- A periodic table of data visualization:http://www.visual-literacy.org/periodic_table/periodic_table.html
- Choosing Colors for Data Visualization:www.perceptualedge.com/articles/b-eye/choosing_colors.pdf
- ColorBrewer: color advice for cartography http://colorbrewer2.org/
- Data Visualization: Rules for Encoding Values in Graph: www.perceptualedge.com/articles/b-eye/encoding_values_in_graph.pdf
- Improving Visualization: http://www.improving-visualisation.org/case-studies
- Introduction to Geographical Data Visualization: http://www.perceptualedge.com/articles/visual_business_intelligence/geographical_data_visualization.pdf

- Wang, S., Corner, A., Chapman, D., & Markowitz, E. (2018). Public engagement with climate imagery in a changing digital landscape. WIREs Climate Change, 9(2), e509. https://doi.org/10.1002/wcc.509
- Nerlich, B., Koteyko, N. & Brown, B. (2010). Theory and language of climate change communication. WIREs Climate Change, 1:97-110.
- Wibeck, V.; Neset, T.-S.; Linnér, B.-O. (2013) Communicating Climate Change through ICT-Based Visualization: Towards an Analytical Framework. Sustainability 2013, 5: 4760-4777.

- Wiréhn, L., Opach, T., Neset, T-S. (2016) Assessing agricultural vulnerability to climate change in the Nordic countries – an interactive geovisualization approach. Environmental Planning and Management. DOI: 10.1080/09640568.2016.1143351.
- Rød J.-K., Opach T., Neset T.-S. (2015). Three core activities toward a relevant integrated vulnerability assessment: validate, visualize, and negotiate. Journal of Risk Research, 18 (7): 877–895.

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- Dangermond & Baker (2010). GIS for Climate Change https://www.esri.com/library/bestpractices/climate-change.pdf
- General introduction to ArcGIS: http://www.lib.umd.edu/binaries/content/assets/public/gov-info-gis/research-and-instruction/introduction-to-gis-workbook.pdf

Week 40

- Neset, T.-S., Opach, T, Lilja, A., Lion, P., Johansson, J. (2016). Map-Based Web Tools Supporting Climate Change Adaptation. The Professional Geographer 68 (1), 103-114, DOI: 10.1080/00330124.2015.1033670.

- Hägerstrand, T. (1970) 'What about people in regional science?', *Papers in Regional Science*, 24(1).
- Vrotsou, K. *et al.* (2014) 'PODD: A portable diary data collection system', in *Proceedings of the Workshop on Advanced Visual Interfaces AVI*. doi: 10.1145/2598153.2600046.
- Seebacher, D. *et al.* (2019) 'Visual Analytics of Volunteered Geographic Information: Detection and Investigation of Urban Heat Islands', *IEEE Computer Graphics and Applications*, 39(5), pp. 83–95. doi: 10.1109/MCG.2019.2926242.
- Navarra, C. *et al.* (2020) 'Visual Exploration of Climate-Related Volunteered Geographic Information', pp. 1–7. doi: 10.2312/envirvis.20201092.

- Winters, Kirsten M., Cushing, Judith B., and Lach, Denise (2016). Designing Visualization Software for Super-wicked Problems' *Information Polity,* vol. 21, no. 4, pp. 399-409.
- Kennedy, Helen & Engebretsen, Martin (2020): "Introduction: The relationships between graphs, charts, maps and meanings, feelings, engagements". In Engebretsen, M. & Kennedy, H. (Eds.) Data Visualization in Society. Amsterdam University Press, pp: 19-32. (0pen access) https://library.oapen.org/bitstream/handle/20.500.12657/22273/9789048543137.pdf?sequence=1&isAllowed=y

- Multidimensional data and GIS: ce.utexas.edu/prof/maidment/StatWR2009/Visual/NetCDF.ppt

Week 41

- Harrower (2003) Tips for designing Effective Animated Maps, Cartographic perspectives, 44: 63-65: http://cartographicperspectives.org/index.php/journal/article/download/cp44-harrower/pdf
- Kraak (2003) Geovisualization illustrated, ISPRS Journal of Photogrammetry and Remote Sensing, 57(5–6):390-399 https://doi.org/10.1016/S0924-2716(02)00167-3

- Dodge & Congalton (2013). Meeting Environmental Challenges with Remote Sensing Imagery. Can be downloaded from: http://www.americangeosciences.org/sites/default/files/RemoteSensing.pdf Selected Case studies:

  "Remote Sensing identifies Hail Damage to Crops", p.36-37

  "Remote Sensing identifies Agricultural Problem Areas", p.48-49

  "Remote Sensing Enables Census of Lake Water Quality", p.50-53

  "Remote Sensing Monitors Vegetation Changes Over Time", p.58-61

  "Remote Sensing Enables Space Shuttle Columbia Recovery", p.80-81

Week 42

- Ertiö, T-P. (2015). Participatory Apps for Urban Planning—Space for Improvement. Planning Practice & Research, 30(3), 303-321. DOI: 10.1080/02697459.2015.1052942
- Neset, T.-S., Wilk, J., Navarra, C., Capell, R., Bartosova, A. (2019). Visualization supported dialogues in the Baltic Sea Region. AMBIO. Volume 48, Issue 11, pp 1314–1324https://doi.org/10.1007/s13280-019-01250-6
- Sheppard, S.R.J., Shaw, A., Flanders, D., Burch, S., Wiek, A., Carmichael, J, Robinson, J., Cohen, S. (2011). Future visioning of local climate change: A framework for community engagement and planning with scenarios and visualization. *Futures* 43 (2011)
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Optional Reading

O'Neill, S. & Nicholson-Cole, S. (2009). 'Fear won't do it': Promoting positive engagement with climate change through visual and iconic representations. Science Communication, 30, 355–379.

Victoria Wibeck (2014) Enhancing learning, communication and public engagement about climate change – some lessons from recent literature, Environmental Education Research, 20:3, 387-411, DOI: 10.1080/13504622.2013.812720
http://dx.doi.org/10.1080/13504622.2013.812720

Gammelgaard Jensen, A, Wibeck, V, Neset, T-S. (2016). Images of climate change – a pilot study of young people's perceptions of ICT-based climate visualization. Climatic Change, 134(1), 73-85. DOI:10.1007/s10584-015-1533-9

Bishop, I. D. (2011). Landscape planning is not a game: Should it be? Landscape and Urban Planning, 100: 390-392.

Bishop et al (2013). Evaluation of data visualisation options for land-use policy and decision making in response to climate change. Environment and Planning B: Planning and Design 2013, volume 40, pages 213 – 233

Hulme, M. (2010). Problems with making and governing global kinds of knowledge. Global Environmental Change Volume 20, Issue 4, October 2010, Pages 558-564

Johansson, J., Neset, T-S S., Linnér, B.-O. (2010). Evaluating Climate Visualization—An Information Visualization Approach. Proceedings of the 14th IEEE International Conference on Information Visualisation

Lewis, J L. and Sheppard, S.R.J. (2006). Culture and communication: Can landscape Visualisation improve forest management consultation with indigenous communities? Landscape and Urban Planning, 77: 291-313.

Marková, I., Linell, P., Grossen, M., and Salazar Orvig, A. (2007) Dialogue in Focus Groups: Exploring Socially Shared Knowledge. London: Equinox.

Moser, S. & Dilling, L. (2004). Making climate hot: Communicating the urgency and challenge of global climate change. Environment, 46, 32–46.

Moser SC (2010). Communicating climate change: history, challenges, process and future directions. Wiley Interdiscip Rev Clim Change 1:31–53

Neset, T.-S., Glaas, E., Gammelgaard Ballantyne, A., Linnér, B.-O., Navarra, C., Opach, T., Johansson, J., Bohman, A., Rød, J.K., Goodsite, M.. (2016). Climate Change at your Doorstep – Geographic Visualization to support Nordic homeowners in adapting to climate change. Applied Geography 74: 65–72, DOI:10.1016/j.apgeog.2016.07.003

Nocke, T.; Sterzel, T.; Böttinger, M.; Wrobel, M. (2008). Visualization of Climate and Climate Change Data: An Overview, in Ehlers et al. (Eds.). Digital Earth Summit on Geoinformatics:Tools for Global Change Research

Rose, Gillian (2016). Visual methodologies: an introduction to researching with visual materials. 4th edition London: Sage, pp. 1-23

Salter, J.D., Campbell C., Journeay, M., Sheppard, S.R.J. (2009). The digital workshop: Exploring the use of interactive and immersive visualisation tools in participatory planning. J. of Environmental Management, 90: 2090-2101.

Shaw, Alison, Stephen Sheppard, Sarah Burch, David Flanders, Arnim Wiek, Jeff Carmichael, John Robinson, and Stewart Cohen. (2009). "Making Local Futures tangible—Synthesizing, Downscaling, and Visualizing Climate Change Scenarios for Participatory Capacity Building." Global Environmental Change 19 (4) (October): 447–463.

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Sheppard, S.R.J. (2012). Visualizing Climate Change: A Guide to Visual Communication of Climate Change and Developing Local Solutions. Routledge, London.

Sheppard, S.R.J (2015). Making climate change visible: A critical role for landscape professionals. Landscape and Urban Planning 142 (2015) 95–105.

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Tufte, E.R. (1990). Envisioning Information. ISBN-13: 978-0961392116

Van Beurden, A. U. C. J. and Douven, W. J. A. M. (1999) Aggregation issues of spatial information in environmental research, International Journal of Geographical Information Science, 13:5, 513-527, DOI: 10.1080/136588199241184

Ware, C. (2013). Information Visualization, Third Edition: Perception for Design (Interactive Technologies). ISBN-13: 978-0123814647

Wibeck, V. (2010) Fokusgrupper: om fokuserade gruppintervjuer som undersökningsmetod [Focus groups: on focused group interviews as a research method]. Lund, Sweden: Studentlitteratur.

Wrobel, M.; Hinkel, J.; Hofmann, M.; Nocke, T; Vohland, K. (2009). Interactive Access to Climate Change Information. Accepted at International Symposium on Environmental Software Systems (ISESS'09), Venice, 2009.

CALP (2010). Local Climate Change Visioning and Landscape Visualizations – Guidance Manual. http://web.forestry.ubc.ca/calp/CALP-Visioning-Guidance-Manual-V1-1.pdf

More on the CALP visioning projects: http://calp.forestry.ubc.ca/resources/