

CV Michael Dorman

Last updated: 2020-05-01

Work experience

January 2016-today Programmer, Ben-Gurion University of the Negev

- Assisting researchers and students of the Department of Geography in computational tasks such as data processing, spatial analysis, geo-statistics, developing web applications, etc., mostly through programming in R, JavaScript and Python.

March 2013-today Lecturer, Ben-Gurion University of the Negev

- *Introduction to Programming for Spatial Data Analysis* 2-credits (Spring 2013), 3-credits (Spring 2015, Spring 2016, Spring 2017, Fall 2017, Fall 2018, Fall 2019) [[Syllabus](#)]
- *Introduction to JavaScript for Web Mapping* 3-credits (Spring 2018, Spring 2019) [[Syllabus](#)]
- *Web Applications for Spatial Data* 3-credits (Fall 2016) [[Syllabus](#)]

March 2016-May 2017 Research Associate, Ben-Gurion University of the Negev

- Doing research on Location-Based Social Network Data.

March 2015-March 2016 Quantitative Ecologist and Information Systems, HaMaarag—Israel's National Ecosystem Assessment Program.

- Statistical analysis of multivariate ecological data
- Design, implementation and management of biodiversity observations database

2010-2015 (during Ph.D) Designing and carrying out research using remote sensing, Geographic Information Systems (GIS) and programming, field and lab work, statistical analysis, writing 6 papers for scientific journals (5 in English, 1 in Hebrew). Additional projects:

- Mapping habitat types in Nahal Kziv area, for BGU (2012)
- Assessing vegetation response to drought using satellite imagery, for Ramat Hanadiv park (2014)

August 2011 Organization of *Soil Degradation and Geo-Informatics* conference at Ben-Gurion University

June 2010 Research Assistant, Plant Ecology Lab, Hebrew University

2007-2009 (During M.Sc) Designing and carrying out greenhouse experiments, genetic markers (RFLP), statistical analysis of results (using SPSS, STATISTICA, CANOCO)

March 2009 - August 2009 Teaching Assistant in *Plant Sciences Laboratory*, Ben-Gurion University

August 2006 Practical work in JNF forestry department, Eshtaol

Education

2010-2015 Ph.D Geography, Ben-Gurion University of the Negev

Thesis title: *Drought induced mortality of Pinus halepensis in planted forests*, supervised by Prof. Tal Svoray and Prof. Avi Perevolotsky [[PDF](#)]

2007-2010 M.Sc Life Sciences, Ben-Gurion University of the Negev

Thesis title: *Phenotypic variation and local adaptation in Oncocylus irises of Israel*, supervised by Dr. Sergei Volis and Dr. Yuval Sapir [[PDF](#)]

2004-2007 B.Sc.Agr Plant Sciences in Agriculture, Hebrew University

Nature Conservation and Land Management program

Computer skills

- **R** Data processing, statistical analysis, spatial analysis, visualization
- **HTML**, **CSS** and **JavaScript** Web development
- **GDAL** and **SAGA** Command line GIS
- **Leaflet.js** Web mapping
- **Node.js** Setting up APIs and database interfaces
- **PostgreSQL** / **PostGIS** Spatial database administration and spatial queries
- **Linux** Command line, administration, basic shell scripts, setting up remote servers
- **Inkscape** Vector graphics editing
- **Python** Web scraping, ArcGIS scripts
- **ArcGIS**, **QGIS**, **Erdas Imagine** GIS and Image Analysis
- **SQLite**, **MongoDB**, **MySQL** Database design and management
- Querying **XML** and **HTML** documents with **XPath**
- Text processing with **Regular Expressions**

Books

- **Dorman, M.** 2020. Introduction to Web Mapping. Chapman and Hall/CRC. [\[CRC\]](#) [\[Amazon\]](#)
- **Dorman, M.** 2014. Learning R for Geospatial Analysis. Packt Publishing. [\[Packt\]](#) [\[Amazon\]](#)

Peer-Reviewed Articles ([Google Scholar](#))

- Hough, I., Just, A. C., Zhou, B., **Dorman, M.**, Lepeule, J., Kloog, I. 2020. A multi-resolution air temperature model for France from MODIS and Landsat thermal data. *Environmental Research*, 17:109244. [\[PDF\]](#)
- Volis, S., **Dorman, D.** 2019. Effects of soil type, period of burial and moisture levels on the germination of *Oncocycclus iris* seeds. *Plant Ecology* 220:1021–1028. [\[PDF\]](#)
- Volis, S., Zhang, Y.-H., Deng, T., **Dorman, M.**, Blecher, M., Abbott, R. J. 2019. Divergence and reproductive isolation between two closely related allopatric *Iris* species. *Biological Journal of the Linnean Society*, 127(2):377–389. [\[PDF\]](#)
- **Dorman, M.**, Erell, E., Vulkan, A., Kloog, I. 2019. Shadow: R package for geometric shadow calculations in an urban environment. *The R Journal* Vol. 11/01. [\[PDF\]](#)
- Dubinin, V., Svoray, T., **Dorman, M.**, Perevolotsky, A. 2018. Detecting biodiversity refugia using remotely sensed data. *Landscape Ecology*, 33:1815–1830. [\[PDF\]](#)
- Shtein, A., Karnieli, A., Katra, I., Raz, R., Levy, I., Lyapustin, A., **Dorman, M.**, Broday, D. M., Kloog, I. 2018. Estimating daily and intra-daily PM10 and PM2.5 in Israel using a spatio-temporal hybrid modeling approach. *Atmospheric Environment*, 191(2018): 142–152. [\[PDF\]](#)

- Svoray, T., **Dorman, M.**, Shahar, G., Kloog, I. 2018. Demonstrating the effect of exposure to nature on happy facial expressions via flickr data: Advantages of non-intrusive social network data analyses and geoinformatics methodologies. *Journal of Environmental Psychology*, 58:93-100. [\[PDF\]](#)
- Stavi, I., Siegal, Z., Drori, B., Hyams, E., Shafir, A., Kamiski, Y., Al-Ashhab, A., **Dorman, M.**, Tsoar, A., 2018. Single Session of Chiseling Tillage for Soil and Vegetation Restoration in Severely Degraded Shrublands. *Water* (20734441), 10(6). [\[PDF\]](#)
- Just, A. C., De Carli, M. M., Shtein, A., **Dorman, M.**, Lyapustin, A., Kloog, I. 2018. Correcting Measurement Error in Satellite Aerosol Optical Depth with Machine Learning for Modeling PM2.5 in the Northeastern USA. *Remote Sensing*, in press [\[PDF\]](#)
- Vulkan, A., Kloog, I., **Dorman, M.**, Erell, E. 2018. Modeling the potential for PV installation in residential buildings in dense urban areas. *Energy and Buildings*, 169:97-109 [\[PDF\]](#)
- Bird, T. L., **Dorman, M.**, Ramot, A., Bouskila, A., Groner, E. 2017. Shrub encroachment effects on habitat heterogeneity and beetle diversity in a Mediterranean coastal dune system. *Land Degradation & Development* 28.8(2017): 2553-2562 [\[PDF\]](#)
- Rosenfeld, A., **Dorman, M.**, Schwartz, J., Novack, V., Just, A. C., Kloog, I. 2017. Estimating daily minimum, maximum, and mean near surface air temperature using hybrid satellite models across Israel. *Environmental research*, 159:297-312 [\[PDF\]](#)
- Barazani, O., Waitz, Y., Tugendhaft, Y., **Dorman, M.**, Dag, A. Hamidat, M., Hijawi, T., Kerem, Z., Kadereit, J. W., Westberg, E. 2017. Testing the potential significance of different scion/rootstock genotype combinations on the ecology of old cultivated olive trees in the southeast Mediterranean area. *BMC ecology*, 17(1), 3 [\[PDF\]](#)
- Cailleret, M., Jansen, S., Robert, E. M., Desoto, L., [and 62 others, including **Dorman, M.**]. 2016. A synthesis of radial growth patterns preceding tree mortality. *Global Change Biology*, 23.4(2017): 1675-1690 [\[PDF\]](#)
- Waitz, Y., Cohen, Y., **Dorman, M.**, Perevolotsky, A. 2015. From microsite selection to population spatial distribution: *Pinus halepensis* colonization in mediterranean-type ecosystems. *Plant Ecology*, 216:1311-1324 [\[PDF\]](#)
- Volis, S., Zhang, Y., **Dorman, M.**, Blecher, M. 2015. *Iris atrofusca* genetic and phenotypic variation, the role of habitat-specific selection in this variation structuring, and conservation implications using quasi in situ guidelines. *Israel Journal of Plant Sciences*, 63(4):347-354. [\[PDF\]](#)
- **Dorman, M.**, Perevolotsky, A., Sarris, D., Svoray, T. 2015. Amount vs. temporal pattern: On the importance of intra-annual climatic conditions on tree growth in a dry environment. *Journal of Arid Environments*, 118:65-68 [\[PDF\]](#)
- **Dorman, M.**, Svoray, T., Perevolotsky, A., Moshe, Y., Sarris, D. 2015. What determines tree mortality in dry environments? A multi-perspective approach. *Ecological Applications*, 25(4):1054-1071 [\[PDF\]](#)
- **Dorman, M.**, Perevolotsky, A., Sarris, D., Svoray, T. 2015. The effect of rainfall and competition intensity on forest response to drought: Lessons learned from a dry extreme. *Oecologia*, 177:1025-1038 [\[PDF\]](#)
- **Dorman, M.**, Svoray, T., Perevolotsky, A. 2013. Homogenization in forest performance across an environmental gradient – The interplay between rainfall and topographic aspect. *Forest Ecology and Management*, 310, 256-266 [\[PDF\]](#)
- **Dorman, M.**, Svoray, T., Perevolotsky, A., Sarris, D. 2013. Forest performance during two consecutive drought periods: Diverging long-term trends and short-term responses along a climatic gradient. *Forest Ecology and Management*, 310, 1-9 [\[PDF\]](#)
- Volis, S., **Dorman, M.**, Blecher, M., Sapir, Y., Burdeniy, L. 2011. Variation partitioning in canonical ordination reveals no effect of soil but an effect of co-occurring species on translocation success in *Iris*

atrofusca. Journal of Applied Ecology, 48:265-273 [\[PDF\]](#)

- **Dorman, M.**, Melnikov, P., Sapir, Y., Volis, S. 2009. Factors affecting dormancy of *Oncocycclus iris* seeds. Israel Journal of Plant Sciences, 57(4):329-333 [\[PDF\]](#)
- **Dorman, M.**, Sapir, Y., Volis, S. 2009. Local adaptation in four *Iris* species tested in a common-garden experiment. Biological Journal of the Linnean Society, 98:267-277 [\[PDF\]](#)

Peer-Reviewed Reports (in Hebrew)

- Sorek, M., **Dorman, M.**, Perlberg, A., Drori, R., Dan, H., Shapira, I., Perevolotsky, A., Kaplan, D., Federman, R. 2016. State of Nature Report Israel 2016. [\[PDF\]](#)

R Packages

- **Dorman, M.** (2020). `ngeo`: k-Nearest Neighbor Join for Spatial Data. R package version 0.3.4. [\[CRAN\]](#) [\[GitHub\]](#)
- **Dorman, M.** (2020). `starsExtra`: Miscellaneous Functions for Working with ‘stars’ Rasters. R package version 0.0.3. [\[CRAN\]](#) [\[GitHub\]](#)
- **Dorman, M.** (2020). `shadow`: Geometric Shadow Calculations. R package version 0.6.4. [\[CRAN\]](#) [\[GitHub\]](#)
- **Dorman, M.** (2019). `mapsapi`: `sf`-Compatible Interface to ‘Google Maps’ APIs. R package version 0.4.2. [\[CRAN\]](#) [\[GitHub\]](#)

Workshops Given

- **Dorman, M.** 2017. *Spatial Data in R: Overview and Examples*. 58th Conference of the Israeli Geographical Association, Beer-Sheva, Israel [\[Slides\]](#)
- **Dorman, M.** 2018. *Geospatial Analysis of Environmental Data*. Exposome Symposium Workshop, New York City, US [\[Slides\]](#)

Short Courses Taken

September 2016 *BGU Teaching Skills Workshop*, Thomas Frick & Yuvalal Liron (hfp consulting), 2-day workshop, Neve Shalom Hotel (16 hours)

May 2016 *Statistical Learning and Data Science*, Prof. Trevor Hastie, 1-day workshop, Tel-Aviv University (4 hours)

April 2012 - June 2012 *Python Programming for Biologists*, Guy Rapaport, 7-meetings course, Ben-Gurion University (21 hours)

January 2011 *Introduction to R*, 1-day concentrated course, Hebrew University (6 hours)

Likelihood Methods in Ecology, Dr. Charles Canham, 5-day concentrated course, Hebrew University (27 hours)

Grants/Awards

2014 The Karshon Foundation Scholarship in Forest Research, Bet-Dagan

2009 Merav Ziv Award for Excellence in Ecology, Sde-Boker

2006, 2007 Dean’s list, Rehovot; JNF grant for “Nature Conservation” B.Sc program, Rehovot

Presentation in conferences

- **Dorman, M.**, Svoray, T., Kloog, I. 2017. How does socio-economic and demographic dissimilarity determine physical and virtual segregation? 58th Conference of the Israeli Geographical Association, Beer-Sheva, Israel (Lecture)
- **Dorman, M.**, Vulkan, A., Erell, E., Kloog, I. 2017. `shadow`: R Package for Geometric Shadow Calculations in an Urban Environment. UseR!2017, Brussels, Belgium (Lecture)
- **Dorman, M.**, Shapira, I. 2015. Intermediate results of the long term monitoring program: A case study of geographical region and proximity to settlements effects on mammal occupancy. 52nd Annual Convention of the Zoological Society of Israel, Mikhmoret, Israel (Poster)
- **Dorman, M.**, Shapira, I. 2015. Intermediate results of the long term monitoring program: A case study of geographical region and proximity to settlements effects on mammal occupancy. 43rd Annual Convention of the Israeli Society of Ecology and Environmental Quality Sciences, Jerusalem, Israel (Poster)
- **Dorman, M.**, Svoray, T., Perevolotsky, A., Moshe, Y., Sarris, D. 2014. What determines tree mortality in dry environments? A multi-perspective approach. 55th Conference of the Israeli Geographical Association, Haifa, Israel (Lecture)
- **Dorman, M.**, Svoray, T., Perevolotsky, A., Moshe, Y., Sarris, D. 2014. What determines tree mortality in dry environments? A multi-perspective approach. 42nd Annual Convention of the Israeli Society of Ecology and Environmental Quality Sciences, Ramat-Gan, Israel (Lecture)
- **Dorman, M.**, Svoray, T., Perevolotsky, A. 2014. Scale and replication in observational work: *Pinus halepensis* mortality in planted forests. Israel Science Foundation Workshop: Replication Uncertainty in the Biological Sciences. Tel-Hai, Israel (Lecture)
- **Dorman, M.**, Perevolotsky, A., Sarris, D., Svoray, T. 2014. The effect of rainfall and competition intensity on forest response to drought: Lessons from a dry environment. Trees at the edge: the biology of growth limitation in trees (Basel-Israel Symposium). Rehovot, Israel (Lecture)
- **Dorman, M.**, Svoray, T., Perevolotsky, A., Cooper, A. 2013. Determinants of tree mortality spatial pattern in a planted forest from the semi-arid region. 41st Annual Convention of the Israeli Society of Ecology and Environmental Quality Sciences, Rehovot, Israel (Lecture)
- **Dorman, M.**, Perevolotsky, A., Svoray, T., 2013. Forest performance during drought periods: diverging long-term trends and short-term responses to annual rainfall along a climatic gradient. INTECOL 2013, London, England (Poster)
- **Dorman, M.**, Perevolotsky, A., Svoray, T., 2013. *Pinus halepensis* forests response to drought: assessment using remote sensing. Land Development Administration Annual Conference, Bet-Dagan, Israel (Lecture)
- **Dorman, M.**, Perevolotsky, A., Svoray, T., 2012. Forest response to a sequence of drought events: Evaluation using remote sensing. 4th International Conference on Drylands, Deserts and Desertification, Sde-Boker, Israel (Lecture)
- **Dorman, M.**, Perevolotsky, A., Svoray, T., 2012. Forest response to a sequence of drought events: Evaluation using remote sensing. 40th Annual Convention of the Israeli Society of Ecology and Environmental Quality Sciences, Tel-Aviv, Israel (Lecture)
- **Dorman, M.**, Perevolotsky, A., Svoray, T., 2012. Spatial interpolation of daily climatic data using geo-statistical methods in R. 3rd Remote Sensing Student Conference, Sde-Boker, Israel (Lecture)
- **Dorman, M.**, Perevolotsky, A., Svoray, T., 2012. Environmental effects on NDWI in Yatir forest during 2003-2011. France-Israel Remote Sensing Workshop, Sde-Boker, Israel (Lecture)

- **Dorman, M.**, Perevolotsky, A., Svoray, T., 2012. Evaluating drought stress changes in planted forests by means of remote sensing. Climate Change & Forest Fires in the Mediterranean Basin: Management & Risk Reduction, Nir-Etzyon, Israel (Lecture)
- **Dorman, M.**, Perevolotsky, A., Svoray, T., 2011. Environmental effects on NDWI in Yatir forest during 2003-2011. 52nd Conference of the Israeli Geographical Association, Tel-Aviv, Israel (Lecture)
- **Dorman, M.**, Perevolotsky, A., Svoray, T., 2011. Remote sensing of drought stress in *Pinus halepensis* planted forests for predicting mortality: A research strategy. 8th Conference on Active Research by Environmental Sciences Students (CARESS), Rehovot, Israel (Poster)
- **Dorman, M.**, Perevolotsky, A., Svoray, T., 2011. Remote sensing of drought stress in *Pinus halepensis* planted forests for predicting mortality: A research strategy. 4th International conference on Mediterranean Pines (MEDPINE), Avignon, France (Poster)
- **Dorman, M.**, Blecher, M., Burdeniy, L., Sapir, Y., Volis, S., 2010. Estimation of environmental effects on plants translocation success, using multivariate analysis. 38th Annual Convention of the Israeli Society of Ecology and Environmental Quality Sciences, Beer-Sheva, Israel (Poster)
- **Dorman, M.**, Sapir, Y., Volis, S., 2009. Species boundaries and local adaptation in four *Iris* species from Israel. Evolution in Jerusalem: A Workshop in Celebration of Darwin's *The Origin of Species*, Jerusalem, Israel (Poster)
- **Dorman, M.**, Sapir, Y., Volis, S., 2008. Species boundaries and local adaptation in four *Iris* species from Israel. 1st International Congress – Documenting, Analyzing and Managing Biodiversity in the Middle East, Aqaba, Jordan (Poster)
- **Dorman, M.**, Sapir, Y., Volis, S., 2008. What determines species distribution? An experiment with four *Oncocylus Iris* species. 36th Annual Convention of the Israeli Society of Ecology and Environmental Quality Sciences, Haifa, Israel (Lecture)

Co-authorship in presentations

- Svoray, T., **Dorman, M.**, Kloog, I. 2016. Spatial variation of emotions on different urban land use types from Flickr social network data. 57th Conference of the Israeli Geographical Association, Tel-Aviv, Israel (Lecture)
- Sorek, M., **Dorman, M.**, Shapira, I., Dan, H., Perlberg, A. 2016. The effect of settlements and agricultural areas on mammal occupancy and activity patterns. 44th Annual Convention of the Israeli Society of Ecology and Environmental Quality Sciences, Tel-Aviv, Israel (Poster)
- **Dorman, M.**, Shapira, I. 2015. Land use type effect on plant, reptile and bird communities composition in the Loess Covered Areas in the Northern Negev. Nature and Parks Authority Annual Conference, Herzliya, Israel (Lecture)

Languages

- English
- Hebrew
- Russian

Reviewer for Journals

- Forest Ecology and Management (2 reviews)
- Israel Journal of Ecology & Evolution (1 review)

Reviewer for Books

- Geocomputation with R (2018)

Research Grant Referee

- ISF - Israel Science Foundation (1 review)