Serajis Salekin

49 Sala Street, Private Bag 3020,
Rotorua 3046, New Zealand.
salekins.forest@gmail.com; serajis.salekin@scionresearch.com
Phone: +64 7 343 5535 (work); Mobile: +64 27 210 7997
https://www.serajissalekin.com/

Research Foci

Forest plant ecology and dynamics | Forest growth and yield modelling | Plant physiology and eco-physiology | Disturbances vs. stand development | Climate change adaptation of trees.

Education

2019	PhD in Forestry, New Zealand school of Forestry, University of Canterbury, New Zealand. *Concentration:* Juvenile to mature stand growth and yield modelling | Plant biophysics | Statistical modelling | Geo-spatial analysis | Eco-physiology | Soil-science
2014	Erasmus Mundus MSc (Multiple) in Mediterranean forestry and Natural Resources Management (MEDfOR). University of Lleida, Spain; University of Lisbon, Portugal; University of Valladolid, Spain; University of Padova, Italy.
2012	Msc in Forestry, Khulna University, Bangladesh
2010	BSc (Hons.) * in Forestry, Khulna University, Bangladesh

Academic distinction

Appointments

2023- Present	Senior forest scientist, Forest ecophysiological modeler at New Zealand Forest Research Institute (Scion Ltd), New Zealand.
2020-2022	Forest scientist, Forest ecophysiological modeler at New Zealand Forest Research Institute (Scion Ltd), New Zealand.
2019-2020	Research assistant at New Zealand School of Forestry, University of Canterbury, Christchurch, New Zealand.
2014	Graduate research student at Catalan Forest science centre (CTFC), Solsona, Spain.
2013	Visiting researcher (Intern.) at the CNRS-Ecotron facilities in Montpellier, France. Offered by Hawkesbury Institute for the Environment, Univeristy of Western Sydney, Australia.

Publications and Talks

Peer-review Publications

In preparation

(* corresponding author)

1. ***Salekin, S.**, Xi, B., Bloomberg, M., and Mason, E. G. (In Preparation). A hybrid height growth and yield model for short rotation *Populus tomentosa* under varying irrigation regimes: A case study from mainland China.

In Review

2. Todoroki, C. L., Steward, G. A., *__Salekin, S.__ (In Review). Preliminary height-diameter and volume equations for New Zealand tōtara (*Podocarpus totara* d.don).
3. __*Salekin, S.__, Dickinson, Y., Bloomberg, M., Meason, D. F. (In Review). Carbon sequestration potential of plantation forest tree species of New Zealand: A comparative study.

Published

4. __*Salekin, S.__, Hossain, M. N., Alam, M. A., Limon, S. H., Rahman, M. S. (2023). Inter-specific competition between seeds and seedlings of two confamilial tropical trees. (Community Ecology). https://doi.org/10.1007/s42974-023-00165-3
5. __*Salekin, S.__, Lad, P., Morgenroth, J., Dickinson, Y. L., Meason, D. F. (2023). Uncertainty in primary and secondary topographic attributes caused by digital elevation model spatial resolution. *Catena*, 231 (107320). https://doi.org/10.1016/j.catena.2023.107320
6. Lin, Y., __Salekin, S.__, and Meason, D. F. (2023). Modelling diameter growth increments of less commonly planted tree species in New Zealand: Insights from a machine learning species distribution model approach. *Forestry: An International Journal of Forest Research*.96(1, 87-103). https://doi.org/10.1093/forestry/cpac037
7. Sultana, N., Limon, S. H., Rahman, M. S., Akhter, A., *__Salekin, S.__, Meason, D. F., Bloomberg, M. (2021). Germination and growth responses to water stress of three agroforestry tree species from Bangladesh. *Environmental Challenges*, 5 (100256). https://doi.org/10.1016/j.envc.2021.100256
8. __*Salekin, S.__, Catalán, C.H., Boczniewicz, D., Phiri, D., Morgenroth, J., Meason, D.F., Mason, E.G. (2021). Global tree taper modelling: A review of applications, methods, functions, and their parameters. *Forests*, 12, 913. https://doi.org/10.3390/f12070913
9. Phiri, D., __Salekin, S.__, Nyirenda, V. R., Simwanda, M., Ranagalage, M., Murayama, Y. (2021). Spread of Covid-19 in Zambia: An assessment of environmental and socioeconomic factors using a classification tree approach. *Scientific African*. https://doi.org/10.1016/j.sciaf.2021.e00827
10. Rahman, M. S., Alam, M. A., __Salekin, S.__, Belal, M. A. H., Rahman, M. S. (2021). The Covid-19 pandemic: A threat to forest and wildlife conservation in Bangladesh? *Trees, Forests and People*, 5(100119). https://doi.org/10.1016/j.tfp.2021.100119
11. West, T. A. P., __Salekin, S.__, Melia, N. Wakelin, S. J., Yao, R. T., Meason, D. F. (2021). Diversification of forestry portfolios for climate change and market risk mitigation. *Journal of Environmental Management*, 289 (112482.
12. __*Salekin, S.,__ Mason, E.G., Morgenroth, J., Meason, Bloomberg, M., Meason, D.F. (2021). Hybrid height growth and survival model for juvenile *Eucalyptus globoidea* (Blakely) and *E. bosistoana* (F. Muell) in New Zealand. *Forest Ecology and Management*, 490 (119074).
13. __*Salekin, S.,__ Bloomberg, M., Morgenroth, J., Mason, E.G., Meason, D. F. (2021). Within-site drivers for soil nutrient variability in plantation forests: A case study from dry sub-humid New Zealand. *Catena*, 200 (105149).
14. Phiri, D., Simwanda, M., __Salekin, S.__, Nyirenda, V.R., Murayama, Y., Ranagalage, M. (2020). Sentinel-2 data for land cover/use mapping: A review. *Remote sensing*, 12 (14), 2291.
15. __*Salekin, S.,__ Morgenroth, J., Mason, E., & Meason, D. (2020). A preliminary growth and yield model for *Eucalyptus globoidea* in New Zealand. *New Zealand Journal of Forest Science*, 50.

16. ***Salekin, S.**, Mason, E. G., Morgenroth, J., Bloomberg, M., & Meason, D. F. (2019). Modelling the Effect of Microsite Influences on the Growth and Survival of Juvenile *Eucalyptus globoidea* (Blakely) and *Eucalyptus bosistoana* (F. Muell) in New Zealand. *Forests*, 10(10), 857.
17. ***Salekin, S.**, Burgess, J., Morgenroth, J., Mason, E., & Meason, D. (2018). A Comparative Study of Three Non-Geostatistical Methods for Optimising Digital Elevation Model Interpolation. *isprs International Journal of Geo-Information*, *7*(8), 300.
18. **Salekin, S.**, Morgenroth, J., & Mason, E. (2017). Site characterisation and growth modelling for durable eucalypts. Durable eucalypts on drylands: protecting and enhancing value, 63, 12.
19. Siddique MRH, Saha S, **Salekin S**, Mahmood H (2017). Salinity strongly drives the survival, growth, leaf demography, and nutrient partitioning in seedlings of *Xylocarpus granatum* J. König. *iForest* 10: 851-856. doi: 10.3832/ifor2382-010
20. Resco de Dios V, Gessler A, Ferrio JP, …., **Salekin S**, Tissue DT, Tjoelker MG, Voltas J, Roy J. 2017. Circadian rhythms regulate the environmental responses of net CO2 exchange in bean and cotton canopies. *Agricultural and Forest Meteorology*, 239, 185-191.
21. Mason, E. G., **Salekin, S.**, & Morgenroth, J. A. 2017. Comparison between meteorological data from the New Zealand National Institute of Water and Atmospheric Research (NIWA) and data from independent meteorological stations. *New Zealand Journal of Forestry Science*, 47(1), 7. doi:10.1186/s40490-017-0088-0
22. Gessler A, Roy J, Kayler Z, Ferrio JP, …., **Salekin S**, Tissue DT, Tjoelker MG, Voltas J, Hoch G, Resco de Dios V. 2017. Night and day – Circadian regulation of night-time dark respiration and light-enhanced dark respiration in plant leaves and canopies. *Environmental and Experimental Botany*. doi: 10.1016/j.envexpbot.2017.01.014.
23. Resco de Dios V, Gessler A, Ferrio JP, …., **Salekin S**, Tissue DT, Tjoelker MG, Voltas J, Roy J. 2016. Circadian rhythms have significant effects on leaf-to-canopy scale gas exchange under field conditions. *GigaScience*, 5(1), 43. doi:10.1186/s13742-016-0149-y
24. Martín-Alcón, S., Coll, L., & **Salekin, S.** (2015). Stand-level drivers of tree-species diversification in Mediterranean pine forests after abandonment of traditional practices. *Forest Ecology and Management*, 353(0), 107-117. doi: http://dx.doi.org/10.1016/j.foreco.2015.05.022
25. Hossain, M., Saha, S., **Salekin**, **S.,** Mamun, A. A., Siddique, M. R. H., Abdullah, S. M. R. (2014). Salinity influence on germination of four important mangrove species of the Sundarbans, Bangladesh. *Agriculture and Forestry*, Vol. 60. Issue 2: 125-135, 2014, Podgorica.

Technical Report and Popular press

1. Jones, A., Palmer, D., **Salekin, S.**, Meason, D., Hall, P. W. (2022). Shot rotation bioenergy forestry. Confidential technical report prepared for Ministry of Primary Industries (MPI), New Zealand.
2. **Salekin, S.**, Pont, D., Dickinson, Y. (2022). Validation of proof-of-concept model. Confidential technical report prepared for Resilient Forest project
3. **Salekin, S.**, Pont, D., Dickinson, Y. (2022). Prototype individual tree growth sub model for even-aged *Pinus radiata* (D. Don). Report prepared for Resilient Forest project.
4. Dickinson, Y. L., **Salekin, S.**, Meason, D. F. (2022). An updated exotic hardwoods default carbon look-up table. Technical report prepared for Ministry of Primary Industries (MPI), New Zealand.

5. **Salekin, S.**, Dickinson, Y. L., Jones, T., Meason, D. F. (2022). Evaluation of space-panted poplar's carbon sequestration, and potential adjustments to the emission trading scheme look-up tables. Technical report prepared for Ministry of Primary Industries (MPI), New Zealand.
6. **Salekin, S.**, Dickinson, Y. L., Meason, D. F. (2022). Estimated minimum poplar stocking required to qualify as forest land. Confidential technical report prepared for Ministry of Primary Industries (MPI), New Zealand.
7. Jones, A. G., Palmer, D., **Salekin, S.**, Meason, D. F., Hall, P. (2021). Strategic review of short-rotation bioenergy forests. Technical report prepared for Scion's strategic science review committee.
8. **Salekin, S.** and Meason, D. F. (2021). Understanding physiological plasticity and modelling approaches at different spatial scales of three exotic tree species in New Zealand: A brief review with field scale data analyses. Technical report prepared for Ministry of Primary Industries (MPI), New Zealand.
9. Meason, D. F., Lin, Y., **Salekin, S.**, Höck, B., and Dowling, L. (2020). Carbon accounting for less commonly grown tree species. New Zealand Tree Grower (November 2020; p15-18).
10. **Salekin S.**, Burgess J. H., Mason E.G., Morgenroth J. (2020). Preliminary juvenile height yield models for three durable Eucalyptus species by integrating site-specific factors. Technical report prepared for Forest Growers Levy Trust (FGLT) and Speciality Wood Products (SWP) research partnership.
11. **Salekin S.**, Bloomberg M., Mason E.G., Morgenroth J. 2019. Soil tests results from three DFI experimental sites, Marlborough. Technical report prepared for New Zealand Dryland Forests Initiative, Marlborough Research Centre, New Zealand.

Presentations

1. **Salekin, S.**, Dickinson, Y. L., Bloomberg, M., and Meason, D. F. 2023. Carbon sequestration potential of plantation forest in New Zealand: A comparative study. 5th International Congress on Planted Forests 2023. (November 7-10). Nairobi, Kenya.
2. **Salekin, S.**, Bloomberg, M., Benye, X., Liu, L., Liu, Y., Li, D., and Mason, E. G. 2023. Potentially usable light sum equations for Populus plantations: A case study from China. Hybrid forest modelling workshop. October 18th, 2023. University of Canterbury, Christchurch, New Zealand.
3. Meason, D., **Salekin, S.**, Lad, P., Owens, J., ……Matson, A. 2022. Forest Flows – Data Fusion of Remote Sensing and Real Time Terrestrial Data for Identifying and Quantifying the Drivers of Forest Hydrological Processes across Different Scales. AGU Fall Meeting, Chicago, IL. 12-16 December 2022.
4. **Salekin, S.**, Mason, E. G., (2021). Site variability in plantation forest: A dryland eucalypt experience through hybrid growth and yield modelling approach. Symposium on "Hybrid growth and yield modelling with modified radiation sums" held in New Zealand School of Forestry, University of Canterbury, Christchurch. 18th November 2021.
5. Meason, D. F., **Salekin, S.**, Lin, Y., and Höck, B. (2021). Growing and managing *Eucalyptus* on dryland sites. Presented to Ministry of Primary Industries (MPI).
6. **Salekin, S.,** Mason, E., Morgenroth, J., Bloomberg, M., Meason, D. 2019. Within and between site variability of juvenile *Eucalyptus globoidea* and *E. bosistoana* grown in New Zealand. Fast

Forward, New Zealand Farm Forestry Association's Conference in Rotorua, New Zealand from March 5 - 6, 2019.

7. **Salekin, S.,** Mason, E., Morgenroth, J., Bloomberg, M., Meason, D. 2017. Modeling juvenile height yield of *Eucalyptus globoidea* and *Eucalyptus bosistoana* in response to micro-site effects. IUFRO Forest Regeneration in Changing Environments in Corvallis, Oregon from July 11th-13th, 2017.
8. **Salekin, S**., 2016. Assessment of micro-scale site variation. Precision Forestry Workshop-2016. Christchurch, New Zealand.
9. **Salekin, S**., Hossain, M. 2013. Effect of Salinity on Germination of *Xylocarpus Granatum* (Koeing) Seeds. VII Young Researchers Meeting on Conservation and Sustainable use of Forest Systems 2013. Valsain, Segovia, Spain. 30th January and 1st February 2013.

Poster presentation

1. **Salekin, S.** 2015. Hybrid model for juvenile durable eucalyptus (*Eucalyptus Bosistoana* & *Eucalyptus globoidea*) by integrating micro & macro-site variables. Forest Growers Research Conference-2015. Nelson, New Zealand.

Research Grants

2022-2023	Growth and yield models for alternative plantation species. PI: Serajis Salekin. NZD 180,000.
2019-2024	Forest Flows. PI: Dr. Dean F. Meason. NZD 13.7 million.
2020-2021	Exotic hardwoods default carbon tables- Emissions Trading Scheme. PI: Dr. Yvette Dickinson. NZD 280,000.

Scholarship and awards

- 2023, NZIFF Chavasse Travel Award (NZD 3500).
- 2019, University of Canterbury open access publishing grants (NZD 1500).
- 2019, College of Engineering (CoE) publishing scholarship from College of Engineering, University of Canterbury (NZD 3600).
- 2018, University of Canterbury open access publishing grants (NZD 2500).
- 2018-2019, TW ADAMS postgraduate scholarship in forestry, University of Canterbury, New Zealand towards completion of PhD in Forestry (NZD 10000).
- 2017, McKelvey Award to attend IUFRO conference at Oregon State University, Corvallis, Oregon (NZD 2500).
- 2015-2019, DFI Postgraduate Scholarship from the New Zealand school of Forestry, University of Canterbury, New Zealand from February, to pursue PhD in Forestry.
- 2012-2014, ERASMUS MUNDUS (category-A) scholarship for M.Sc. in Mediterranean Forestry and Natural Resources Management (MEDfOR).
- 2007-2010, Merit scholarship from Khulna University, Bangladesh for consistently holding position in merit list for four years of BSc in Forestry (Hons') programme.

Teaching experience, supervision, and training

- PhD committee member of Moari West at University of Waikato, Hamilton, New Zealand. PA: Assoc. Prof. Mike Clearwater.

- Teaching Assistant (TA), 2016-2019, Conducting workshop for the course Fundamental of Engineering (ENGR101), College of Engineering, University of Canterbury, New Zealand.
- Academic Tutor, 2018-2019, Provide tutoring on species distribution and growth dynamics modelling to postgraduate students at School of Biological Science and School of Forestry in University of Canterbury.
- Successfully completed the training on teaching provided by Academic Skills Centre, University of Canterbury, New Zealand.

Research Services

Editor: New Zealand Journal of Forestry Science (2020-Present). Land (2020-2021).
Referee: Agriculture and Forest Meteorology (2); Catena (2); Canadian Journal of Forest Research (1); American Journal of Botany (2); Journal of Forestry Research (1); New Zealand Journal of Forest Science (3); Scandinavian Journal of Forest Research (5); Silva Fennica (2); Southern Forests: A journal of forest science (2); ISPRS International Journal of Geo-Information system (8); Remote Sensing (14); Symmetry (3).
Postgraduate thesis examination: School of Biological Science, The University of Auckland, New Zealand.

Membership

- March 2023 – Acting co-ECR leader for Scion to Present in Science New Zealand.
- January 2022- present, Professional ECR member of Royal Society of New Zealand Te Apārangi (MRSNZ) and representative of Plant Development and Physiology (PDP) research group from Scion.
- 2016- 2022, Graduate member of New Zealand institute of Forester (NZIF).
- January 2022-2023, Scion science seminar committee member (Internal).

Computer skills

Office suite: Word processor, Spread sheet, Presentation software, Access.
Statistical software and language: JMP v10, SPSS, and R environment.
GIS and Remote sensing software: ArcGIS, eCognition, LStools, SAGA & QGIS.

Instrumental orientation, field expertise and license

- Laboratory experience with UV-spectrophotometer, Flame photometer, Portable photosynthesis system (Li-6400) and Leaf area index measurement system (Li-2200c).
- Hold a full New Zealand driving license and capable of driving in all terrain conditions.
- Trained health and safety personnel including fire hazard and outdoor first aid.