

Report of Working Party 5 (Environmental and Ecosystem Services) Activities  
For the IPC Executive Committee meeting October 2020

Current WP5 officers include:

Chair: Sharon Doty

Co-Vice Chair: Andrej Pilipović

Co-Vice Chair: Lou Licht

Technical Secretary: Ron Zalesny

We have had two major activities since our last IPC meeting:

First, we worked with Elizabeth Rogers (USDA Forest Service) who designed our WP5 Science Briefs and finalized ten of them (see below) for inclusion on our WP5 webpage. Sciences briefs are two-page summaries of published manuscripts and major reports, activities, etc. related to *Environmental and Ecosystem Services*.

Second, we conceptually redesigned our WP5 webpage and sent those suggested revisions to Ben Caldwell. We are hoping our WP5 webpage will be new during autumn 2020.

In addition, we made further progress on the activities proposed by WP5 in Berlin for 2016-2020:

1. Hold WP5 meetings as satellite meetings to other relevant conferences
  - a. Ron Zalesny led a WP5 meeting at the Woody Crops International Conference held during July 2018 in Rhinelander, Wisconsin, USA.
  - b. Andrej Pilipović led a WP5 meeting at the 15<sup>th</sup> International Phytotechnologies Conference held during October 2018 in Novi Sad, Serbia.
  - c. Ron Zalesny led a WP5 meeting at the Seventh International Poplar Symposium held during October/November 2018 in Buenos Aires, Argentina.
  - d. Andrej Pilipović, Ron Zalesny, and Lou Licht planned to hold a WP5 meeting at the 16<sup>th</sup> International Phytotechnologies Conference during September 2020, but the conference was postponed because of the COVID pandemic. Pilipović and Zalesny plan to hold a WP5 meeting when the conference takes place – hopefully in 2021.
  - e. Andrej Pilipović plans to hold a WP5 meeting at the Eighth International Poplar Symposium during 2022 in Novi Sad, Serbia.
2. Create science briefs on “green technologies” for distribution via the IPC website to stakeholders
  - a. Sharon Doty teaches a course on “Environmental Applications of Plants: Bioremediation and Bioenergy” in which she assigned the making of phyto info sheets. She has over fifty of these phyto info sheets from previous years of the course from which to select for posting on the website, two of which have already been converted to Science Briefs. She has a hundred students enrolled in the course this autumn quarter and will again select the best ones for finalizing as Science Briefs (see below)

- b. The following Science Briefs were finalized (Elizabeth Rogers, Technical Editor):
  - i. Zalesny, R.S. Jr., Stange, C.M., and Birr, B.A. 2019. Hybrid poplar and Russian olive: Height growth, survival, and phytoremediation on saline soils. (December 2019)
  - ii. Zalesny, R.S. Jr. and Bauer, E.O. 2019. Selection of poplars and willows for phytoremediation of nitrate. (December 2019)
  - iii. Pilipović, A., Zalesny, R.S. Jr., Orlović, S., Drekić, M., Pekeč, S., Katanić, M., and Poljaković-Pajnik, L. 2019. Poplars grown on artificially contaminated soils: growth and physiology. (October 2019)
  - iv. Zalesny, R.S. Jr., Headlee, W.L., Gopalakrishnan, G., Bauer, E.O., Hall, R.B., Hazel, D.W., Isebrands, J.G., Licht, L.A., Negri, M.C., Guthrie Nichols, E., Rockwood, D.L., and Wiese, A.H. 2019. Long-term phytoremediation using poplar: ecosystem services. (June 2019)
  - v. Zalesny, J.A., Zalesny, R.S. Jr., Wiese, A.H., and Hall, R.B. 2007. Selecting poplar trees to remediate landfill leachate. (June 2019)
  - vi. Zalesny, R.S. Jr., Berndes, G., Dimitriou, I., Fritsche, U., Miller, C., Eisenbies, M., Ghezehei, S., Hazel, D., Headlee, W.L., Mola-Yudego, B., Negri, M.C., Guthrie-Nichols, E., Quinn, J., Shifflett, S.D., Therasme, O., Volk, T.A., and Zumpf, C.R. 2019. Positive water linkages of bioenergy and phytotechnologies: poplars and willows. (April 2019)
  - vii. Zalesny, R.S. Jr., and Bauer, E.O. 2007. Bridging the gap between phytoremediation, agronomy, horticulture, and forestry. (April 2019)
  - viii. Rogers, E.R., Zalesny, R.S. Jr., Hallett, R.A., Headlee, W.L., and Wiese, A.H. 2019. Root-shoot allocations of trees grown for phytoremediation. (March 2019)
  - ix. Drugge, J., and Doty, S. 2019. Riparian buffers in agricultural areas. (March 2019)
  - x. Stavney, L. 2019. Phytoremediation in your own neighborhood: A guide for high school students. (March 2019)
3. Increase use of the IPC Newsletter to disseminate reports on the “Environmental and Ecosystem Services” research
  - a. We included reports in the 2016 to 2018 issues
    - i. 2016 issue: “Key roles of the poplar microbiome”- Sharon Doty
    - ii. 2018 issue: “Successful field trial of endophyte-assisted poplar tree phytoremediation of TCE”- Sharon Doty
    - iii. 2018 issue: “Experiences of application of willows for environmental services” – Written by Teresa Cerrillo (genetic resources group)
  - b. We have not seen additional IPC newsletters since 2018. If this is still a forum in which we can disseminate information on the environmental applications of poplars and other fast-growing trees, we are happy to do so