



Poplar and Willow News

Newsletter of the International Poplar Commission

Issue N° 4, December 2014



Dear readers,

Welcome to the 4th edition of the Newsletter of the International Poplar Commission (IPC) of the Food and Agriculture Organization (FAO) of the United Nations. We present news on upcoming and past events, publications and articles of general interest related to poplars and willow cultivation, and, last but not least, the latest information on the on-going reform process of the IPC.

We would like to thank all those persons who contributed to this newsletter and invite you to share your knowledge, experience and thoughts with our readers in the next edition of the Poplar & Willow News.

Please send your contributions to the e-mail: salicaceas@gmail.com

The editorial committee

UPCOMING EVENTS

3rd World Teak Conference

‘Strengthening Global Teak Resources and Markets for Sustainable Development’

11 to 16 May 2015, Guayaquil, Ecuador

Organized by the Ecuadorian Association of the Producers of Teak and Tropical Wood (ASOTECA), the Food and Agriculture Organization of the United Nations (FAO), TEAKNET, an international teak

information network, India, and the International Union of Forest Research Organizations (IUFRO).

For more details see: www.worldteakconference.com

International Symposium on Forest Biotechnology for Family Farms

20 – 22 May 2015, Foz do Iguaçu, Brazil.

The event is organized by EMBRAPA (Brazilian Agricultural Research Corporation), FAO (Food and Agriculture Organization of the United Nations) and FETRAF SUL (Southern Federation of Workers on Family Farms). It aims to share information, knowledge and experience on the use of biotechnology to improve productivity and sustainable forest management and to support industrial wood production by family farmers.

For more information, please see: www.fbs2015.com.br

XIV World Forestry Congress

‘Forests and People: Investing in a Sustainable Future’

7-11 September 2015, Durban, South Africa

The 14th World Forestry Congress is the first to be held in Africa and is hosted by the Republic of South

Africa. The event is inclusive of people from all countries, regions and sectors, whether they belong to a government organization, NGO, private company, scientific or professional body, a forestry society, or simply have a personal interest in attending. The broad participation and inclusive discussion on forestry issues will facilitate their mainstreaming in global agendas on sustainable development as well as building new partnerships. More details including registration, the programme, calls for papers and posters, etc., are available at the main congress website

www.fao.org/forestry/wfc

Contact: WFC-XIV-Info@fao.org 

PAST EVENTS

IPC side event at COFO 2014: Promotion of IPC reform efforts and launch of the book “Poplars and Willows – Trees for Society and the Environment”

by Walter Kollert, IPC-Secretary, Rome
June 25th, 2014

At the 22nd Committee on Forestry Session (COFO) held from 23rd to 27th June 2014 at FAO HQ in Rome (www.fao.org/forestry/57758/en/) the IPC-Secretariat organized a side event to promote the proposed IPC-reform among the country delegates of COFO. The side event was opened by Mr. Douglas McGuire, FAO, and attended by 43 participants from 13 countries, among them the Argentinean delegation to COFO headed by Mr Julio Rubén Nasser, a number of high-ranking representatives from the Italian poplar community and members of

the IPC Executive Committee (see photos).



Ing. Esteban Borodowski, Ing. Mirta Rosa Larrieu and Ing. Lucrecia Santinoni, members of the Argentinean delegation.

The side event provided an opportunity to give high visibility to the accomplishments of IPC and its members and to strengthen and promote the IPC reform process with interested parties. The event was also used to officially launch the new publication “Poplars and Willows – Trees for Society and the Environment” in the presence of the two book editors Judson Isebrands and Jim Richardson. The book was co-published by CAB International and FAO and is a major reference work on poplars and willows that documents the work of nearly 70 contributing authors from 15 countries.

All presentations held during the side event, the



Ms. Natalia Demidova, Northern Research Institute of Forestry, Russian Federation.



Mr. Douglas McGuire opens the side event and introduces the program

full list of participants as well as a number of photos can be downloaded from the IPC website:

www.fao.org/forestry/ipc/86964/

An interview given by Mr. Stefano Bisoffi, member of the IPC-Executive Committee on the significance of poplar cultivation can be downloaded from <http://forestry.fao.msgfocus.com/q/112UMosBv7s8wMGbipm/vw> (right side, last interview at the bottom) or from www.youtube.com/watch?v=HKgZcHmRpzY

Report on the International Poplar Symposium in Vancouver, Canada

by Jim Richardson, IPC Executive Committee member and Technical Director, Poplar and Willow Council of Canada .

E-mail: jrichardson@on.aibn.com

The 6th International Poplar Symposium (IPS VI) was held at the University of British Columbia (UBC) in Vancouver, Canada in July 2014. The IPS series, which is organized under the auspices of the International Union of Forest Research Organizations (IUFRO), is synchronized with IPC Sessions in that IPS events take place halfway in time between IPC Sessions. Most of the participants in the meeting of

the IPC Executive Committee (reported elsewhere in this newsletter), held at UBC the day before IPS VI opened, also attended the Symposium. The theme for this major international scientific conference attended by 200 participants from around the world was '*Domestication of Populus and Salix: How far have we come, and how far do we have to go?*' This topic was explored in three days of technical sessions dealing with poplar and willow genetics, genomics, physiology, pests & pathology, environmental applications and management applications. In total, 70 oral and 127 poster presentations were given, including keynote addresses by Loren Rieseberg of UBC and Brian Stanton of GreenWood Resources, based in Portland, Oregon, USA. The program also included many other prominent poplar and willow scientists.

Two consecutive field study tours took place immediately following the Symposium. The first provided a full day of field visits to poplar plantations and natural ecosystems in the Lower Fraser Valley of British Columbia, a flat fertile region with some of the most productive agricultural land in Canada. An additional three-day field tour followed immediately to the scenic Okanagan Valley in the south-central interior of British Columbia, with visits to poplar plantations irrigated by landfill leachate or municipal wastewater, as well as aspen-based industry, conifer tree improvement trials and operations, and a nut tree farm. The Okanagan Valley is perhaps best known for its many wineries.

Presentations given at IPS VI as well as a collection



IPS VI participants at the University of British Columbia, Vancouver, Canada. Photo: UBC - Forestry



Retired British Columbia Forest Service poplar scientist Mike Carlson with hybrid poplar spacing trial at Kalamalka Research Centre, Vernon, British Columbia. Photo: Jim Richardson

of photos taken during the field tours are available on the website of the Poplar and Willow Council of Canada (PWCC)(formerly the Poplar Council of Canada) at www.poplar.ca/article/international-poplar-symposium-ips-vi-in-vancouver-157.asp. (In some cases only abstracts of presentations are available.) PWCC held its annual business meeting, which included the adoption of the new name for the Council, during the Symposium in Vancouver.

The European Poplar Association holds its 6th General Assembly and 4th European Poplar Congress in Belgium

by François Sougnez
Secretary General of Pro-Populus,
Ghent,
françois.sougnez@cei-bois.org

On invitation of its Belgian members (Fédération Nationale des Scieries - FNS, Union Nationale des Entreprises du Bois – UNEBO, Centre de Populiculture du Hainaut - CPH and Union flamande pour l'Exploitation de la Forêt – UVB), Pro-Populus

gathered on 19 and 20 June 2014 in Ghent at the occasion of its 6th General Assembly, 4th European Poplar Congress and field visits.

In the morning session of 19 June, the members of the General Assembly took part in the traditional presentation of the activity report, future projects and relevant European dossiers. In the afternoon, the European Poplar Congress gathered some 70 participants from Belgium, France, Italy and Spain around a programme focusing on the situation on the poplar market from a global, European and national perspective as well as on the latest news in terms of research and development.

On the second day, the European delegation went to Oudenaarde for a visit of the production facilities of DDS, a company specialized in poplar light packaging. The programme continued with a tour of two poplar plantations and the presentation on site of two new varieties by the Research Institute for Nature and Forest INBO.

At the time of closing this two-day programme, all participants recognised that poplar is a qualitative species characterized by a fast growth, which can offer swift solutions to safeguard the future availability of wood, contribute to a more durable and greener economy and help mitigating climate change. They all agreed to continue their cooperation to sensitize European policy makers

about these inherent advantages, which are great assets for reaching the European targets in terms of sustainable development.

For more information, please contact the author or visit the website www.pro-populus.eu. □

ARTICLES OF INTEREST

Executive Committee advances proposed IPC-Reform

by Walter Kollert, IPC-Secretary, Rome

The 47th Session of the IPC-Executive Committee was hosted by FAO at the University of British Columbia in Vancouver, Canada, on 20 July 2014. The meeting was chaired by Mr Martin Weih, chairperson of the IPC, and attended by 18 participants including members of the Executive Committee, representatives of the working parties, one observer from Germany, and the Secretary of the IPC (see photos).

The main focus of the meeting was placed on the IPC-reform and the challenges IPC was facing in the future. After intensive consultations amongst all participants the 12 represented members of the IPC-Executive Committee unanimously decided to propose to the Commission the following amendments to the IPC-Convention in order to support the IPC reform process:

1. Expansion of the thematic scope of the Commission

While maintaining the existing mandate on poplars and willows, the geographic, biological and technical scope of the IPC will be expanded by including other genera/species with similar attributes for industrial and energy uses and environmental applications, such as *Acacia*, *Salix* and *Tectona*. Those genera are mentioned as examples only; work on other genera/species with similar attributes is not excluded.

2. Revision of the title of the Commission

The title of the IPC will be modified to indicate the expansion of the thematic scope as follows: *International Commission on Poplars and Other Trees Sustaining People and the Environment*. The acronym will remain "IPC" as it is a well-introduced term in the international forestry and agroforestry community.

3. Thematic restructuring of the Working Parties

A thematic restructuring of the existing working parties is proposed aiming at streamlining, integrating and revitalizing the working parties and redesigning their mandates. The proposed new working parties are:

1. Taxonomy, Nomenclature and Registration (replacing the Sub-Committee on Nomenclature and Registration)
2. Domestication and Conservation of Genetic Resources



Participants of the 47th IPC-Executive Committee Meeting, from left to right: Ms. Barbara Thomas, Ms. Jaconette Mirck, Ms. Catherine Bastien, Mr. Georg von Wühlisch, Mr. Naldo Anselmi, Mr. Jim Richardson, Mr. Joris van Acker, Mr. Martin Weih, Mr. Mauritz Ramstedt, Mr. Emile Gardiner, Mr. Judson Isebrands, Ms. Sharon Doty, Ms. Marijke Steenackers, Mr. Walter Kollert, Mr. Jim Carle, Mr. Stefano Bisoffi.

3. Plant Health and Resilience to Threats and Crises
4. Sustainable Livelihoods, Land-use, Products and Bioenergy
5. Environmental and Ecosystem Services
6. Policy, Communication and Outreach

Until the next IPC Session in 2016, the working parties will continue to work under the existing structures and office bearers. The new working party structures will be applied for the first time to shape the scientific program of the 2016 Session. The assignment of researchers and experts to each working party as well as the election of office bearers will be decided during business meetings in 2016. The restructuring of the working parties does not require amendments to the Convention.

4. Revitalizing and strengthening the National Poplar Commissions (NPC's)

IPC member states are encouraged to revitalize and strengthen their national poplar commissions by implementing the IPC recommendations at the national level. In addition, and in line with the agreed new name of the IPC, the NPCs are encouraged to adjust their names accordingly.

5. Increased funding of the IPC-Secretariat

The effective functioning of the IPC Secretariat is made difficult by insufficient resources. With declining regular program budgets and extra-budgetary donor sources, the Secretariat is considered under-resourced and inadequately equipped to fully perform its servicing tasks, in particular in view of the implementation of the on-going IPC reform. Therefore, greater support for the Secretariat should be secured including through increased funding from external resources.

6. Use of official languages acc. to geographical distribution of members

The language policy of FAO is grounded on the principle of parity and balance in the use of FAO's languages, combined with the need to maintain a pragmatic approach in this respect. Within this framework, the IPC may decide the language composition for its meetings taking into account the geographical distribution of members and their working languages.

7. Elimination of the "General Committee"

Under Article VI-5 of the IPC-Convention, provision is made for the setting up, at each session of the Commission, of a General Committee consisting of the Chair and two Vice-Chairs of the Session, as well as the Chair and Vice-Chair of the Executive Committee. In practice, the General Committee has not been formed at IPC sessions for an extended period of time, which is a clear indication that it has become obsolete. Since no particular purpose would be served by forming the General Committee, it is to be eliminated from the Convention.

8. Use of gender-neutral language

In the text of the IPC Convention, the words "chairman" and "chairmen" are used several times. In keeping with Resolution 7/99 on the use of gender-neutral language in the FAO Basic Texts, adopted by the Conference in 2009, wherever such terms appear in the Convention, they should be replaced with "chairperson" or "chairpersons", which are unbiased on account of gender.

The full report of 47th IPC-Executive Committee can be downloaded from the IPC website: www.fao.org/forestry/ipc/69641/.

Assisting bioenergy farmers using new technologies for crop monitoring

by Justin P. Heavey, State University of New York - College of Environmental Science and Forestry, Department of Forest & Natural Resource Management, Willow Biomass Project, Syracuse, NY, USA,
Email: jpheavey@esf.edu

Monitoring and managing hundreds or thousands of acres of new bioenergy crops can be challenging. For biomass feedstocks like shrub willow, the first few growing seasons after planting are a critical time in the lifecycle of the crop. Shrub willow is a pioneer species that requires full sunlight, unimpeded by competing vegetation, to maximize its potential for rapid growth rates. Cultivated varieties of shrub willow are mostly resistant to major incidence of pests and diseases, but sporadic outbreaks sometimes occur that can impact crop growth. These and other issues that could reduce crop performance need to

be identified and addressed as quickly as possible so the plants and root system can become fully established and dominate the site.

One tool that has recently assisted in these efforts for commercial willow crops in New York State is GPS-enabled cameras and mapping software. Digital cameras with built-in GPS units are becoming more common and affordable. An internal GPS receiver allows each photo taken in the field to be "geo-tagged" with geographic information including the location (coordinates) where the photo was taken, the direction of the shot, and other spatial information. Photos can then be input into a computer and viewed on aerial maps using one of several free software programs such as "GeoSetter" or "Google Earth". This allows visual information on crops across widespread areas to be conveyed and shared quickly and easily. Extension personnel can communicate the overall health and vigor of a crop across several hundred acres in one map (Figure 1) and highlight areas where additional management may be warranted, all in one computer file easily shared amongst growers and other stakeholders. A picture can say a thousand words, and a series of geo-tagged

photos distributed across an interactive map of commercial-scale bioenergy plantings can efficiently and effectively communicate large amounts of information. Using this approach consistently over time also creates a digital archive of photo-maps than can further assist in the long-term tracking of crop development and the effectiveness of various management practices.

This technology has been an effective crop monitoring tool for extension staff at the College of Environmental Science and Forestry (SUNY-ESF) who are providing technical assistance to commercial growers managing 1,200 acres of willow biomass crops in Northern New York. Crop monitoring reports, centered around geo-tagged photo-maps created throughout the growing season, allowed extension staff to precisely communicate areas of weed competition and pest outbreak (Figure 2) so growers could quickly implement additional management in targeted areas. Over 800 acres of newly planted willow crops, now one-year-old on a two-year-old root systems, are four to eight feet tall and generally in good condition, thanks in part to this new technology and innovative approach to crop monitoring.

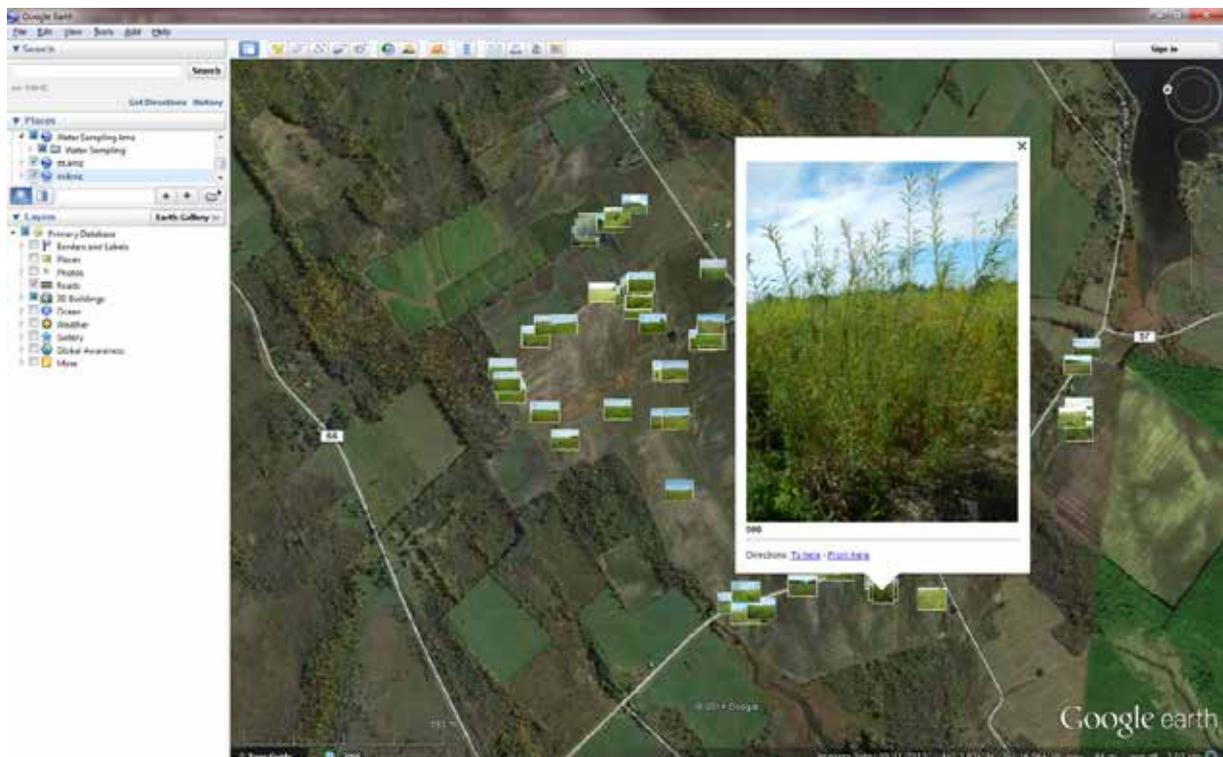


Figure 1: A series of geo-tagged photos across five hundred acres of shrub willow bioenergy crops in New York State, displayed in the Google Earth software program. Each thumbnail on the map can be expanded to provide visual reports of crop conditions, weed and pest pressure in precise locations across large areas.



Figure 2: Geo-tagged photos across a 100 acre parcel of new willow biomass crops helped to identify and mitigate isolated outbreaks of "leaf sawfly" in 2014, a willow pest that can completely defoliate a young willow plants if not properly managed.

Degradation, phytoprotection, and phytoremediation of phenanthrene by endophyte *Pseudomonas putida*, PD1

by Zareen Khan, David Roman, Trent Kintz, May delas Alas, Raymond Yap, and Sharon L. Doty - Environmental Science and Technology

Carcinogenic pollutants are prevalent in our environment but effective technologies to remove them are limited and expensive. Phytoremediation, the use of plants to clean up pollutants, is less expensive and stabilizes the soil against erosion. Poplars and willows are commonly used for phytoremediation applications due to their rapid growth, deep roots, ease of propagation and innate abilities to detoxify some pollutants. A common limitation to phytoremediation technology, however, is that some pollutants can be toxic to the plant, rendering the plant ineffective for remediation. In the past few years, attention has turned to the importance of the human microbiota, the microorganisms that live within us, for our health. Similarly, microbes within plants also are important for plant health, providing

nutrients, increasing stress tolerance, and in some cases, detoxifying pollutants that the plants take up. Endophytes are a subset of this microbiota that live within plants and do not cause disease but rather act as symbiotic partners. Polycyclic aromatic hydrocarbons (PAHs) are classified as "priority pollutants" because of their carcinogenicity and toxicity. One of these common PAH pollutants is phenanthrene. Plants can take up this pollutant to some degree but then are killed by the phytotoxicity. The laboratory of Prof. Sharon Doty, chair of the Environmental Applications group of the IPC, isolated a natural microbial endophyte that can break down phenanthrene. When willow or grasses were colonized with this bacterium, they were able to tolerate this normally toxic



Willow treated with microbe from *P. deltooides*

chemical. The plant-microbe partnership resulted in improved removal of this pollutant from the environment.

Funding was provided by the NIH/NIEHS SBIR with Edenspace (Award Number: 2R44ES 020099-02).

For further information please see link to University of Washington press release:

www.washington.edu/news/2014/11/17/probiotics-for-plants-boost-detox-abilities-untreated-plants-overdose-and-die/

Doty Lab website: <http://depts.washington.edu/envaplab/> 

MEET THE MEMBERS OF THE IPC-EXECUTIVE COMMITTEE

Mr. Esteban Borodowski, Argentina

Degree of Agronomist received at the University of Buenos Aires.

Graduate degree in Environmental Management from the National University of San Martin.

Professor of the Faculty of Agronomy of the University of Buenos Aires.



Coordinator of Forestry Extension of the Forestry Production Department of the Ministry of Agriculture, Livestock and Fisheries of Argentina. Technical Secretary of the National Poplar Commission of Argentina and member of the Executive Committee of the International Poplar Commission of the United Nations Food and Agriculture Organization (FAO). Member of the Organizing Committee of the International Congress of Salicaceae in Argentina, held every two years. He has published research papers in international and national forest Congresses, articles and technical publications in journals and newspapers, mainly of Salicaceae, forestry on Delta Paraná region, about forestry extension and on environmental management.

Mr. Meng Zhu-Lu, China

Prof. Dr. Meng-Zhu Lu is the Director of the State Key Laboratory of Tree Genetics and Breeding at the Chinese Academy of Forestry in Beijing, P. R. China. He got his Ph.D in Forest Genetics, from the Swedish University of Agricultural Sciences in 1997. His research activity is mainly focused on: 1) Breeding poplars to improve the biotic (insect) and abiotic stress (freezing) resistance through genetic engineering, including the characterization of novel resistance-related genes. He took part in the development of the first insect-resistant transgenic poplar in China, which had been commercialized in 2001; 2) Establishment of a regeneration system of secondary vascular structures (wood formation) and genomic platform. In this research the molecular mechanisms of wood formation are analyzed based on the proteomic and microarray data and candidate genes involved for regulating wood properties. He has finished 5 major national projects and published more than 40 scientific papers since he took the position at the Chinese Academy of Forestry. 



NEW RESEARCH ON POPLARS AND WILLOWS

Yulia A. Kuzovkina and Lorenzo Vietto. An update on the cultivar registration of *Populus* and *Salix* (Salicaceae). *Skvortsovia*: 1(2): 133 – 148 (2014).

Link: <http://skvortsovia.uran.ru/2014/1203.pdf>

Yuko Kurita, Kei'ichi Baba, Miwa Ohnishi, Aya Anegawa, Chizuko Shichijo, Keiko Kosuge, Hidehiro Fukaki & Tetsuro Mimura. Establishment of a shortened annual cycle system; a tool for the analysis of annual re-translocation of phosphorus in the deciduous woody plant (*Populus alba* L.). *Journal of Plant Research*. July 2014, Volume 127, Issue 4, pp 545-551.

Link: <http://link.springer.com/article/10.1007%2Fs10265-014-0634-2>

Kévin Tocquard, Clément Lafon-Placette, Daniel Auguin, Beatriz Muries, Gisèle Bronner, David Lopez, Boris Fumanal, Jérôme Franchel, Sylvain Bourgerie, Stéphane Maury, Philippe Label, Jean-Louis Julien, Patricia Roeckel-Drevet, Jean-Stéphane Venisse.

In silico study of wall-associated kinase family reveals large-scale genomic expansion potentially connected with functional diversification in *Populus*. *Tree Genetics & Genomes*. October 2014, Volume 10, Issue 5, pp 1135-1147.

Link: <http://link.springer.com/article/10.1007/s11295-014-0748-7> 

EDITORIAL

The purpose of the IPC-Newsletter is to inform and review the main activities of the IPC and other relevant organizations with the aim of spreading information of interest to people actively involved in Salicaceae. The Newsletter provides information about conferences and meetings hosted by national poplar commissions of member countries and other news and events of interest related to the production of, and research in, poplar and willow. The Newsletter is also a space for information and discussion and we hope that it will help increase communication between members of our community. We invite all readers to contribute to the next edition of the Newsletter through articles, papers, research reports, discussions, and interviews, etc. Please email your contributions to salicaceas@gmail.com 

Editorial Committee

Professor Dr Martin Weih,

President, IPC

Agronomist Esteban Borodowski,

Argentine Poplar Commission, IPC Executive Committee

Dr Walter Kollert, Secretary, IPC

Mrs Clara María Garrido,

Argentine Poplar Commission

Production:

Argentine Poplar Commission

Layout design: Mr. Roberto Cenciarelli, FAO

To subscribe, or to make inquiries, please write to:

salicaceas@gmail.com