

PRO/LINE/UP

Efficient Practices of Land Use Management
Integrating Water Resources Protection and
Non-structural Flood Mitigation Experiences

NEWSLETTER OF THE PROLINE-CE PROJECT

* Issue 2 * July 2018





The project consortium can look back on almost two years of intensive work, since after the launching of PROLINE-CE in July 2016, not only a lot of reports were developed by the 13 project partners but also intensive activities within 10 different pilot areas have already been started, aiming at the improvement of existing land use management practices. All this should lead to an enhanced status of our drinking water concerning both quality and quantity.

First of all, surveys of the status-quo in each participating country were carried out. The resulting description of strengths and weaknesses as well as of experiences made within the first series of national stakeholder workshops were summarized in a transnational best management practice report and a catalogue of strategies and measures, to be integrated into existing policy guidelines.

According to the aforementioned studies, agriculture was identified as the land-use type that causes most significant pressures on water quality and quantity, mainly because of the conventional soil tillage and inadequate application of pesticides and fertilizers. Likewise, urban areas with sealed surfaces and insufficient sewage systems as well as poor forest management pose a serious risk from the aspects of water protection and defence against hazardous effects of floods.

Within the pilot areas - clustered according to their geographic specification and natural site characteristics and main land use - some of these conflicts regarding drinking water protection are currently surveyed in detail and necessary measures and actions to achieve a sustainable drinking water supply for the future are pointed out. The outcomes of the different pilot actions will contribute to a transnational action plan for achieving best functional patterns of land. It shall contain the sequence of steps in order to reach a smooth steering of using different land cover types within CE.

The first results were presented to a broader audience and discussed during the first Round Table and the Mid-term-conference, which was held in Ljubljana on June 12th/13th, jointly organised with another INTERREG-project, CAMARO-D, funded by the Danube Transnational Programme.





CAPACITY BUILDING AND STAKEHOLDER ENGAGEMENT

In order to achieve the main objective of PROLINE-CE, which is improved protection of drinking water resources by integrated land-use management approach, it is necessary to determine in which manner land-use activities influence drinking water quality and quantity. By applying analytical SWOT (strengths, weaknesses, opportunities and threats) and DPSIR (driver, pressure, state, impact, response) frameworks, most important gaps and potentials for improvement in current management practices are derived. Additionally, a detailed peer review of land use and water management practices is provided, forming a detailed state-of-the-art compendium regarding water management, drinking water protection zones, land-use activities, flood and drought mitigation in Central Europe. Important contribution is provided by developing existing best management practices catalogue, where over 200 best management practices are shown for different types of land uses (e.g. agriculture, forestry, urban and industrial areas), including a chapter dealing with non-structural flood mitigation measures, whose advantages over structural (“grey”) measures include sustainability over the longer period of time, with minimal costs for operation and maintenance.

Furthermore, Work package (WP) T1 marked the first structured stakeholder involvement in the project, without whom the implementation and dissemination of project results would be impossible. Start-up series of stakeholder's workshops were organized by project partners (country leaders) in seven CE countries. The workshops were successfully carried out and attended by 191 participants of various professional backgrounds such as foresters, ecologists, hydrogeologists, urban planners, farmers, university researchers, policy and decision makers, water suppliers, journalists, NGOs, broad population and many more. During the workshops, interesting thematic lectures were held by invited speakers, followed by capacity building activities and interactive dialogue where stakeholders informed project partners of gaps and management issues they encounter in every-day business while project partners informed stakeholders of innovative best management practices and their application in real-life scenarios.





Presentations and interactive dialogue during Austrian workshops, organized by PROLINE-CE Lead Partner - Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (© PRISMA)





WORK PACKAGE T1 - CAPITALIZATION

On the basis of gaps and proposed solutions identified by stakeholders, a “Transnational catalogue of strategies and measures to be integrated into existing policy guidelines” was developed, providing a major advancement towards improved management practices in Central Europe. This Transnational catalogue contains a set of 38 innovative best management practices for water protection which could be implemented either in PROLINE-CE pilot areas or beyond. The most important output of this work package is the “Strategy for the improvement of policy guidelines”, which encompasses main results and findings of T1 and sets the foundations for further PROLINE-CE outputs, mainly development of pilot actions, strategies and action plans (Guide towards Optimal WATER REGime - GOWARE and Drinking Water/Floods/Land-Use Charta - DriFLU) for improved protection of drinking water resources.

The synthesis of the WP T1 deliverables provided an overview of applicable best management practices and measures supported by stakeholder input that are ready for integration into higher level strategies and policy guidelines which is the next step relevant for the following work packages. Overall, successful development of WP T1 “Capitalization: Capacity Building and Stakeholder Engagement” provides methodology and vision for further PROLINE-CE activities towards operationalization of best management practices, identifying funding systems and encouraging intensive cooperation with relevant stakeholders to push application of PROLINE-CE outputs and results.





Modro lake in Imotski
(© Jasmina Luka Reberski, Croatian Geological Survey)

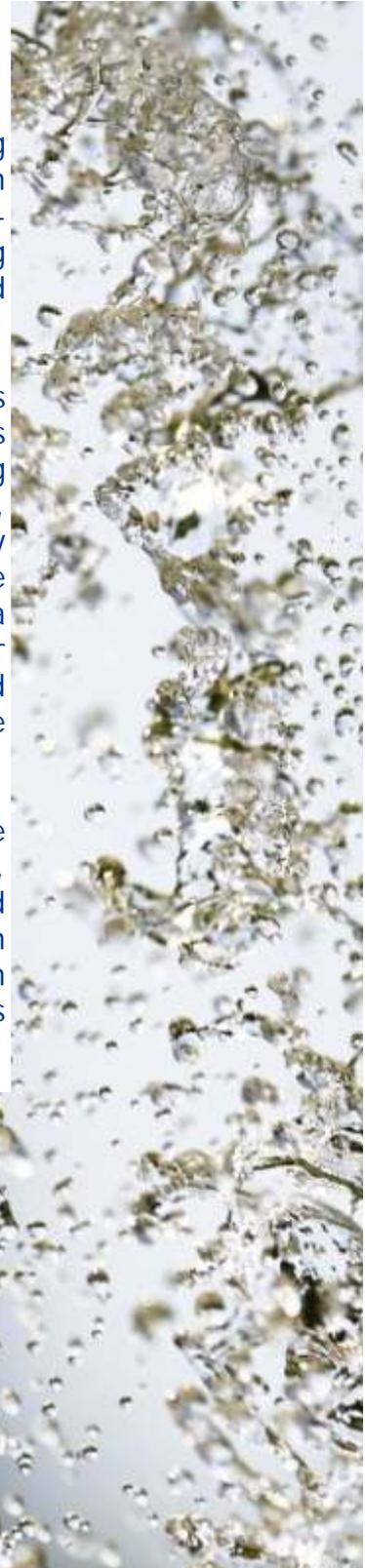


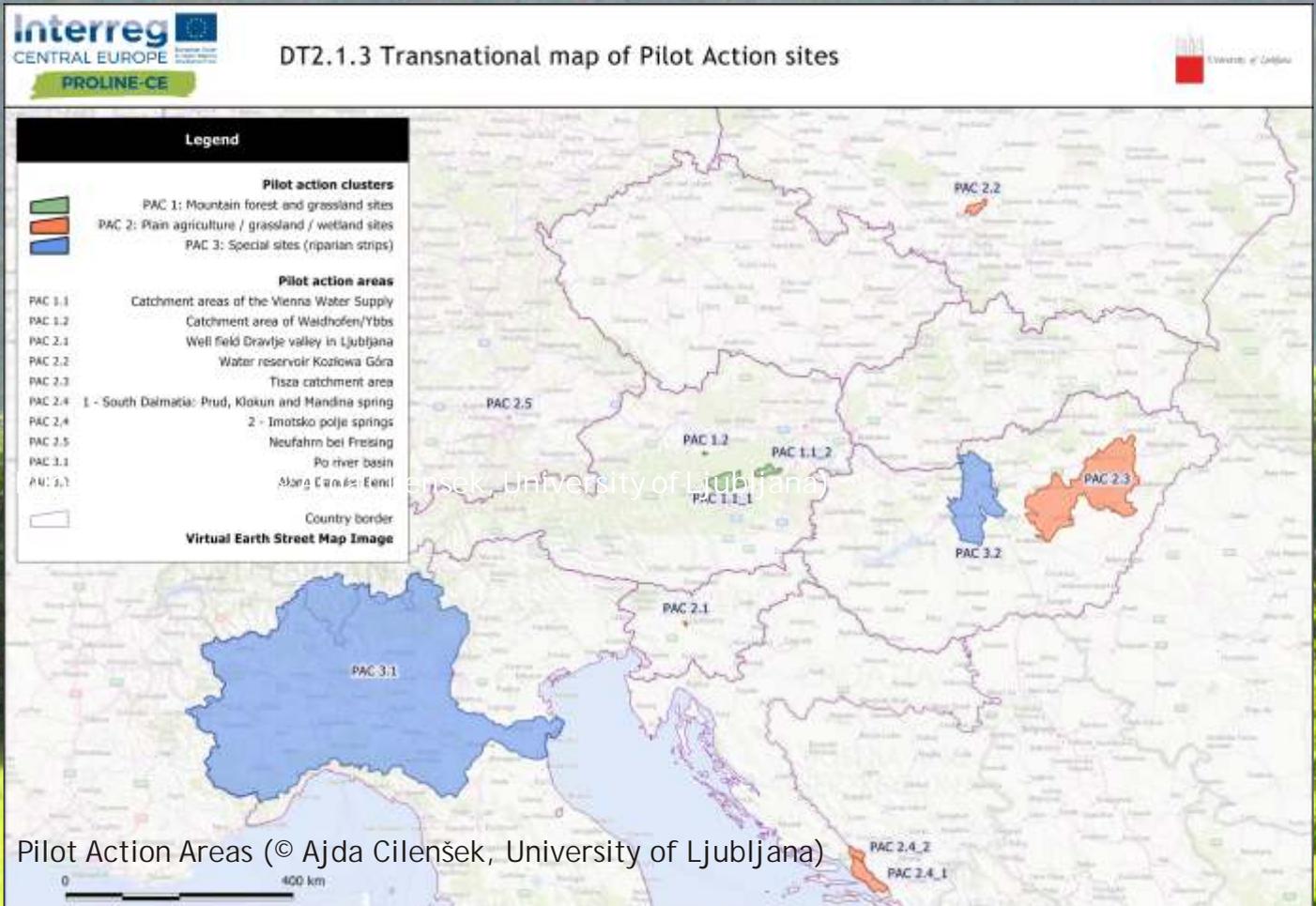
IMPLEMENTATION AND FEEDBACK

The main objective of the PROLINE-CE is implementation of the existing strategies and management plans in order to improve the current situation in the land use management, drinking water sources protection and non-structural flood mitigation. In T2, best management practices for drinking water supply issues derived from Work Package T1 are reviewed in selected Pilot Actions.

Pilot Action presents activities performed at Pilot Site, such as study of gaps and best management practices of land use and flood protection measures for enabling drinking water protection. Implementation status of existing best management practices is identified. In case of lacks identified, possibilities of improvements are proposed. Thus, water supply management systems and best management practices should be strategically implemented in the Pilot Actions, in order to achieve a function-oriented land-use based spatial management for drinking water protection at the operational level. Measures and actions are analysed and proposed concerning mitigation of extremes and achieving a sustainable drinking water management.

Pilot Actions were selected in order to cover the broad range of possible conflicts regarding land use (forest practices, agriculture, urbanization, etc.) and flood management versus drinking water protection and management in different natural conditions: mountainous areas, plain areas and riparian strips. Therefore, the single Pilot Action is allocated in three clusters: mountain sites, plain sites and special sites - riparian strips (Page 9 and 10).







WORK PACKAGE T2 - PILOTS

CLUSTERED PILOT AREAS



© Vienna Water, A

CLUSTER 1 - Austrian Mountain sites



CLUSTER 2 - Slovenian Plain Areas



© Water Science Institute, SI



© Mauro Noberini, IT

CLUSTER 3 - Italian Riparian strips



For all Pilot Actions cost effective and environmental friendly risk management is a prerequisite for ensuring safety of drinking water, therefore mitigation measures will be developed and piloted, including ecosystem services of water bodies and wetlands. Drinking water sources along rivers are vulnerable to floods, more distant areas to droughts. Developed best practices for flood and drought risk management will be implemented and tested concerning their contribution to improvement of drinking water safety and effectiveness including ecosystem services as well as economic efficiency. According to the outcomes of the different Pilot Actions, an Action Plan for achieving best functional patterns of land use will be lined out. It shall contain the sequence of steps in order to reach a smooth steering of using different land cover types within CE. The revised best land use management practices are a basis for the improvement of policy guidelines in the respective regions.

Practical applicability during and after project implementation is guaranteed due to meeting the various stakeholders' needs that have been identified before. Pilot Actions cover manifold issues and conflicts between land uses, water supply and water protection needs. Thus they can be applied in order to generate similar results in other areas. The Action Plan generated is taking into account all those issues and lines out best practices identified and sets the basis for improvement of policy guidelines. By means of tailored workshops different target groups - also beyond the project partnership - become acquainted with this new strategic document.

Results of activities performed within Pilot Action are presented on the interactive web platform: <http://proline-ce.fgg.uni-lj.si/>





VISION AND GUIDANCE

In recent years, the significant role of ecosystems in preserving quality and quantity of water resources for the different purposes and protecting population and assets by the effects of hydrological hazards has been unambiguously delineated by researchers and recognised by Administrators, water operators and communities.

Nevertheless, about the so-called “hydrologic ecological services” defined as “benefits to people that are produced by terrestrial ecosystem effects on freshwater” (Brauman, 2007), several outstanding issues remain. Among the others, in which ways the monetary value of such services can be assessed and then what may result the most effective mechanisms to fund and sustain them.

In this regard, based on local case studies, it worth recalling that a value close to US\$350 and \$5,500 per ha per year has been respectively found for water flow regulation services provided by terrestrial ecosystems (cultivated lands, grasslands, forests) and wetlands (de Groot et al., 2012).

On these grounds, WP3 is aimed to develop and promote measures and practices optimizing water management in different landscapes retrievable in Central Europe and reducing, at the same time, the occurrence and magnitude of water-related disasters through an adequate trade-off between the two objectives.

The experiences gathered on the different Pilot Actions will be capitalised and, hopefully, permit achieving several key products:

- elaboration of a transnational, but tailored at national scale, plan for land-use management and its variation addressing, in effective way, drinking water protection and water related disasters induced by water excess or shortage (flood and droughts);
- definition of recommendations properly targeted for operational (e.g. water suppliers) and spatial planning and management purposes (e.g. Municipalities or Regional Authorities) promoting a sustainable and safe utilisation of water resources;

All the findings and the developed approaches will then systematized in CE Transnational Guide towards Optimal WATER REgime (GOWARE) conceived as



the tool supporting project partners in preparing adequate information transfer to stakeholders and providing a plan for implementation of sustainable land use management in participating regions beyond project lifetime.

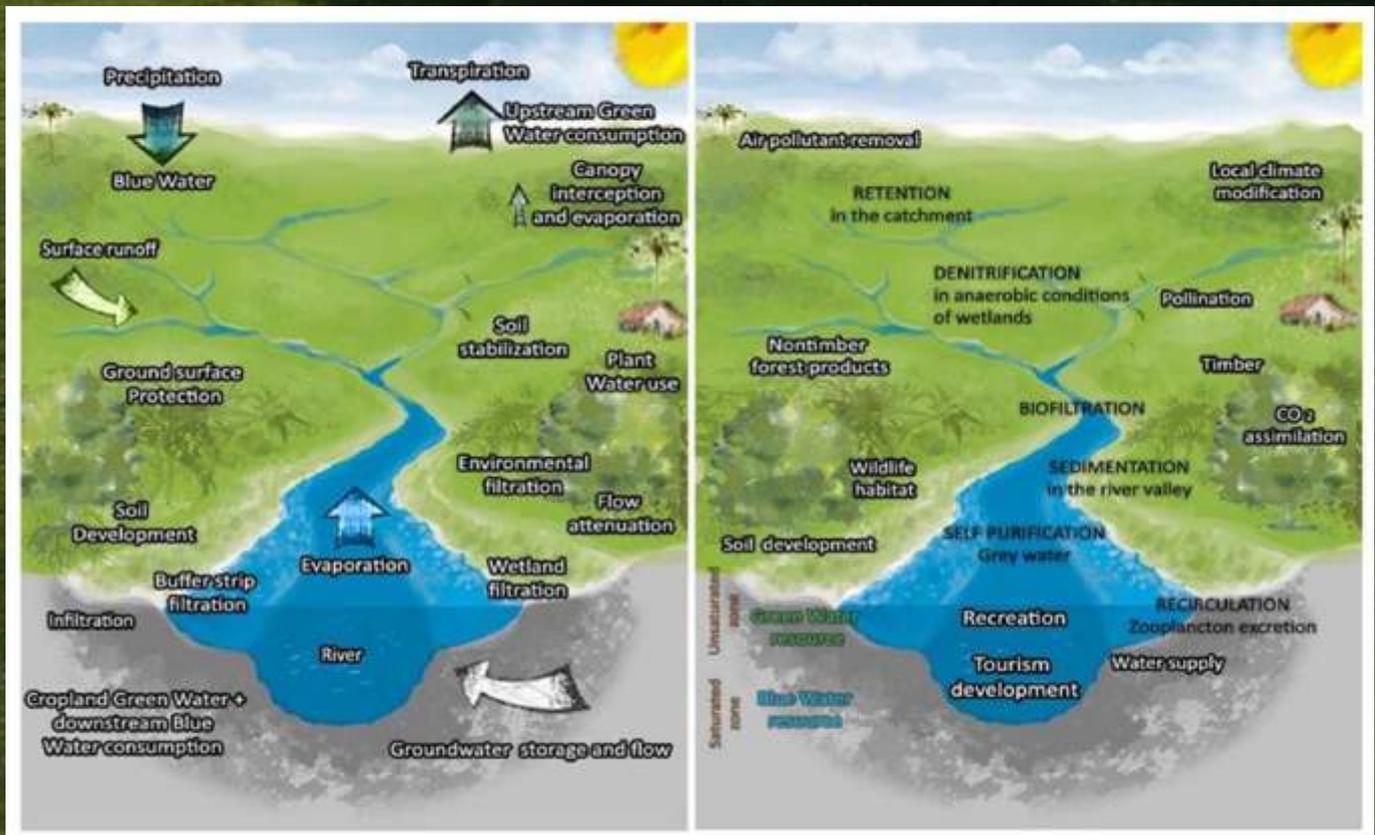
REFERENCES

Brauman KA, Daily GC, Duarte TK, Mooney HA. The nature and value of ecosystem services: an overview highlighting hydrologic services. *Annu Rev Environ Resour* 2007, 32:6798.

de Groot, R., Brander, L., van der Ploeg, S., Costanza, R., Bernard, F., Braat, L., Christie, M., Crossman, N., Ghermandi, A., Hein, L., Hussain, S., Kumar, P., McVittie, A., Portela, R., Rodriguez, L.C., ten Brink, P., van Beukering, P., 2012. Global estimates of the value of ecosystems and their services in monetary units. *Ecosyst. Serv.* 1, 5061.

Taffarello et al. (2017) Hydrological services in the Atlantic Forest, Brazil: An ecosystem-based adaptation using ecohydrological monitoring *Climate Services* 8 (2017) 116 doi.org/10.1016/j.cliser.2017.10.005





Ecohydrological flows and ecosystem services into a catchment [from Taffarello et al., 2017]



STRATEGIC POSITIONING AND COMMITMENT

One of the main outputs of PROLINE-CE is the so-called DriFLU Charta. The abbreviation "DriFLU" stands for "Drinking water/Floods/Land use" combining the most important thematic issues within this project.

This joint declaration act will contain transnational guidelines regarding an efficient protection of drinking water resources. This objective should be achieved through the development of sustainable and appropriate land use and management measures aiming at the protection of drinking water resources and additionally at the mitigation as well as reduction of droughts and floods influencing these resources, under the challenges of climate change.

Based on the main outcomes of the previous working steps within PROLINE-CE a common agreed paper between all participating project partners will be prepared and at the end of the project during the Final Conference - signed by notable representatives of each country to determine the most important tasks towards an optimized and effective land use and flood / drought management with efficient organizational structures regarding drinking water protection.

To ensure the usability of this Charta on different levels an adequate intensive stakeholder involvement is envisaged resulting in additional DriFLU Chartas for each participating country to have the possibility to focus more on national specific characteristics and problems.

Back to back with the Mid-term-conference in Ljubljana in June 2018 the first stakeholder dialogue / round table was conducted to identify still existing shortcomings and challenges as well as to discuss national arrangements for the DriFLU Charta. Therefore several experts coming from different field of actions (agriculture, forestry and water management) and countries, also outside the Central Europe programme area, were invited to provide their point of view and valuable inputs for the further development of DriFLU and GOWARE (Transnational Guide towards an Optimal Water Regime).







LJUBLJANA, 12./13.06.2018

The aim of the first transnational Round Table was to get important inputs from experts outside the project consortium for the development of the two main outputs of PROLINE-CE: GOWARE and DriFLU Charta. After short presentations of the respective Work package Leaders informing about the foreseen activities, four experts coming from different fields of action (agriculture, water management and forest management) and diverse countries (Austria, Slovenia, Great Britain) presented their point of view concerning drinking water protection and related challenges.

During the moderated workshop afterwards, costs and benefits of environmental services, necessary measuring and monitoring as well as data collection were discussed. Above all, it was determined that authorities should work closer together in order to balance different interests. This issue will be supported by PROLINE-CE: measure bundles will be developed which on the one side improve drinking water protection and on the other side also mitigate floods and droughts. Each participating country should enforce respective subsidies within the next period of the European common agricultural policy.

Whereas the Round Table was foreseen only for PROLINE-CE issues, the Mid-term conference the next day was held together with another INTERREG-project, CAMARO-D (funded by the Danube Transnational Programme). The Austrian Federal Ministry of Sustainability and Tourism is Lead Partner also of this project which is dealing with water resources and adequate land use in general. More than 100 participants attended this event, where not only an overview of PROLINE-CE and CAMARO-D activities was provided but also an insight into other EU projects dealing with similar topics was given, in order to show up possible synergies.

In the afternoon, a panel discussion was introduced by short impulse presentations, given by experts with diverse working backgrounds and related topics (agro-meteorological, agricultural, forest management, spatial planning and EUSDR coordination). During the discussion process, again similar topics as during the Round Table were pointed out: the importance of multi-sectoral coordination and the building of synergies to define common interests.



ROUND TABLE & MID-TERM-CONFERENCE



© PRISMAolutions, AT



© PRISMAolutions, AT



LEAD PARTNER, PROJECT COORDINATOR

Federal Ministry for Sustainability and Tourism; Directorate -General III,
Forestry and Sustainability

Hubert Siegel * e-mail: hubert.siegel@bmnt.gv.at * <http://www.bmnt.gv.at>

WORK PACKAGE COMMUNICATION

Austrian Research Centre for Forests (BFW); Department of Natural Hazards

Elisabeth Gerhardt * e-mail: elisabeth.gerhardt@bfw.gv.at *
<http://bfw.ac.at/>

EDITOR

Elisabeth Gerhardt (BFW)

DESIGN AND LAYOUT

Hans Kiessling (BMNT)

COPYEDITING AND PROOFREADING:

Gudrun Schrömmmer (PRISMA)

PUBLISHER:

PRISMA solutions, Klostergasse 18, 2340 Mödling, Austria;
e-mail: office@prisma-solutions.at

More information: www.interreg-central.eu/proline-ce

PICTURES (FREE OF CHARGE):

Frontpage: BMNT/Alexander Haiden 1, Kiessling 1 (at the bottom);

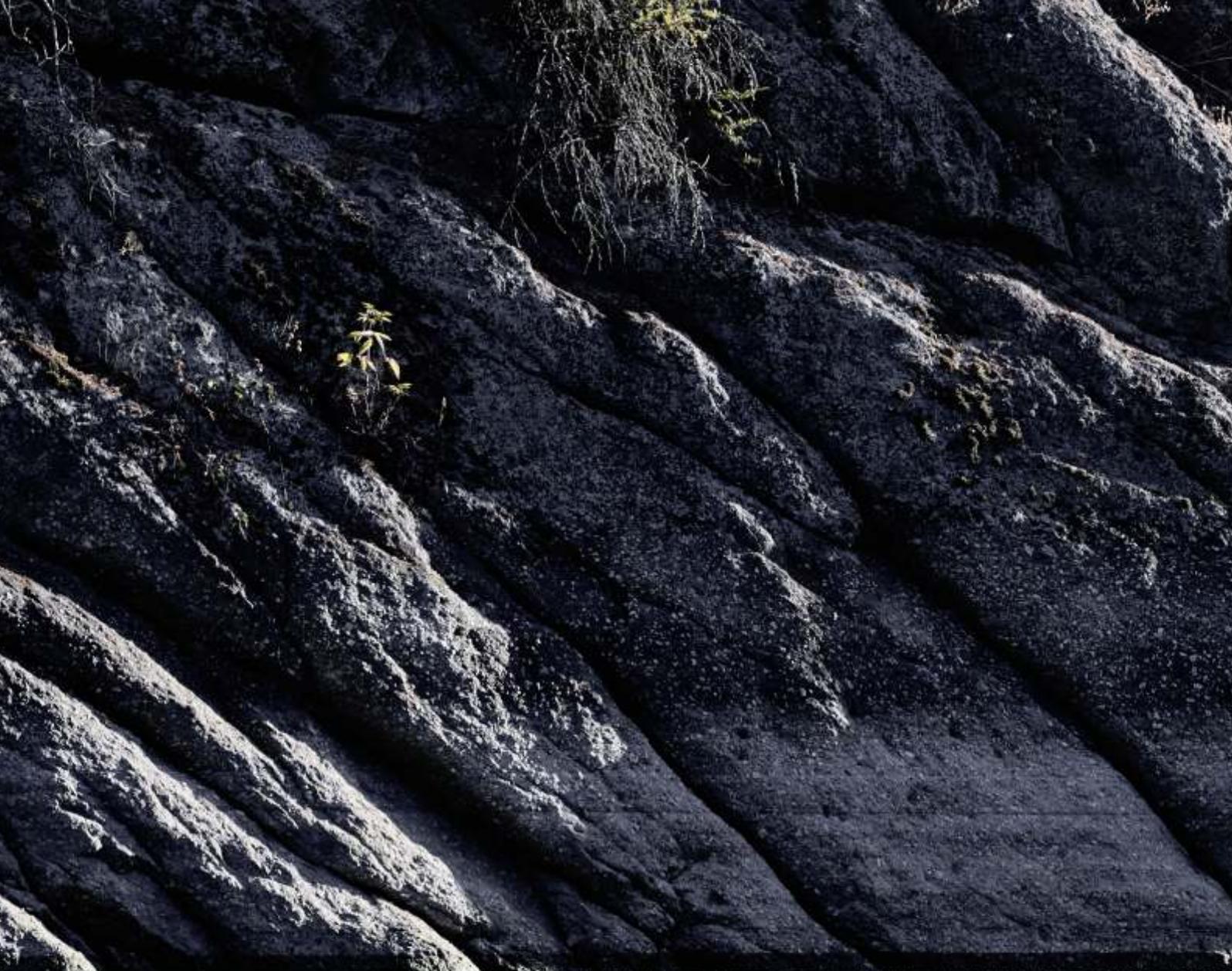
back/page 20: BMNT/Alexander Haiden;

Pages 4, 5, 11, 12, 13, 14, 15, 19: Schima;

Pages 3, 8, 10, 16, 17, 18: BMNT/Alexander Haiden

Pages 2, 6, 7, 9: Kiessling





NEWSLETTER

* Issue 2 * July 2018

