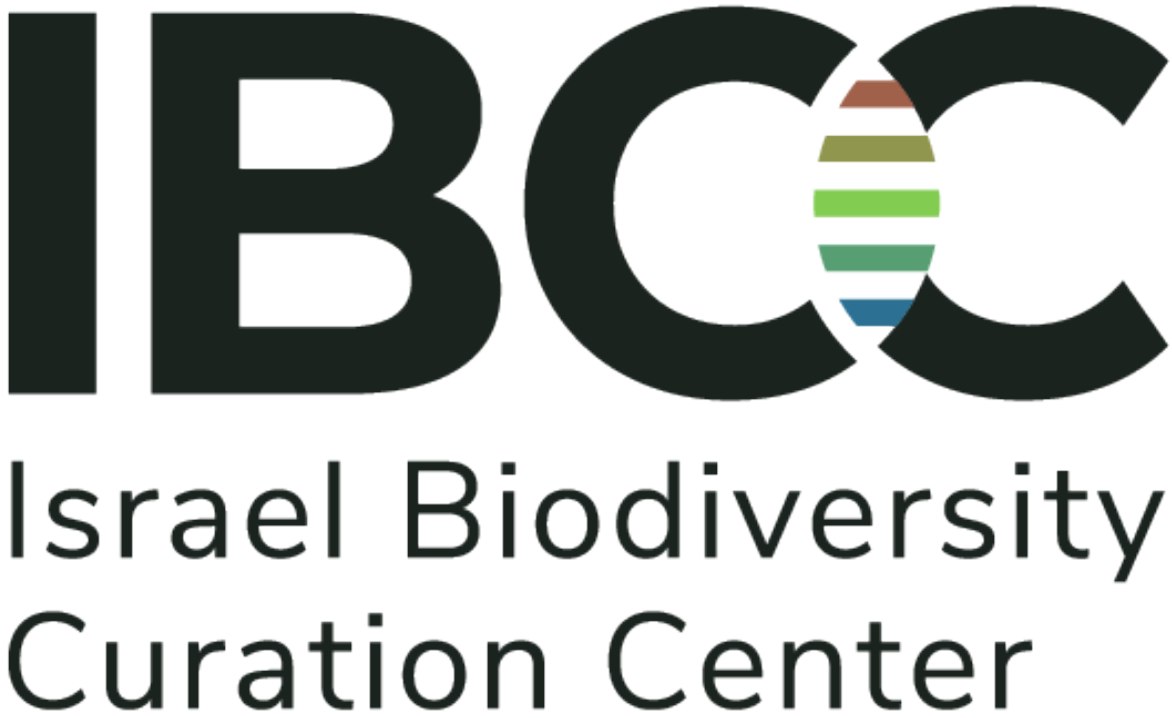
Newsletter 1 - December 2025



This newsletter provides a brief overview of the strategic progress made across all work packages of the Israel Biodiversity Curation and Conservation (IBCC) project during 2025. In this first year, our efforts focused on building core infrastructure, standardizing national datasets, and launching species-level characterization work. Together, these steps established a solid operational foundation for the project.

As you can see, we have a new logo and we are working on the first version of the IBCC website which will be accessible through our domain in the next few weeks, stay tuned!

Work Package 1 — Curation and Integration of Biodiversity Collections

Development of the IBCC platform is well underway, designed to bring together data from the country's major biodiversity collections. The Israel Gene Bank (IGB)

prepared its system to support researcher collection management, paving the way for future data transfer into IBCC. Integration discussions have also started with several groups and institutions, including early negotiations with the Israel Antiquities Authority and the Israel Nature and Parks Authority (INPA) regarding observational datasets.

A major effort this year involved digitizing the Ministry of Agriculture's large PPIS insect collection. IGB dedicated personnel and equipment to the task, with the goal of capturing metadata for roughly 50,000 specimens. To support international interoperability, IBCC also began aligning its data structures with the European Geo-Bio Collection community.

Following extensive data refinement, we identify about 90 key plant species representing broad ecological, taxonomic, and functional diversity (Table 1, list of key plan species IBCC - see bottom of page). Shifting from a single-population approach to prioritizing areas where multiple key species overlap, the expert and curator forum of IBCC finalized 15 hotspot selection to ensure broad regions where key species co-occur with important ecological niches, providing optimal sites for collection while balancing ecological coverage and logistical feasibility. These hotspots are now available for IBCC members via Google Maps , and as downloadable PDF (15 HotSpots IBCC 2026, see bottom of page) and shapefile formats for GIS applications.

A detailed strategic program for a large plant survey including the 90 species across 15 regions in Israel was established and a contract was signed with the Deshe Institute who will conduct the survey in 2025-2026 season. Based on this survey, sampling locations will be determined and the planned species for the following years will be sampled. Out of the key species list, 25 priority plant species (Table 1) were selected for collection and characterization during the 2025–2026 season. The selection was guided by technical evidence and distribution data.

Work Package 2 — Virtual Database and Computational Environment

A dedicated AWS account was established through IUCC, and an initial pilot of the Atlas of Living Australia (ALA) platform was deployed. Early system inconsistencies led to the recruitment of a specialized cloud developer in Tel-

Hai (soon University) to stabilize and optimize the setup. In parallel, core fields for taxonomy, geography, and metadata were defined to ensure all data can be integrated in a unified structure. The next steps include finalizing a fully functional ALA pilot and designing connections to external national and international databases.

Work Package 3 — Characterization and Conservation of Biodiversity

This work package launched high-throughput genomic and physiological initiatives. Protocols were successfully developed for plants, using the endemic and endangered *Trifolium israeliticum*, resulting in the assembly of the species' first chromosome-level reference genome. This achievement immediately informed conservation planning: analysis of 13 populations revealed three distinct genetic clusters, providing essential guidance for risk assessments and management. Seeds from additional species (Table 1) were collected during the pilot round of 2025 by IBCC members and germinated in the Israeli Gene Bank, and tissues were collected and sent to the Genome Center. DNA extraction protocols were established for 5 species which will be sent for whole genome sequencing in the next weeks.

Initial protocols for morphological and phenological characterization of plants *in situ* were established and the teams are getting prepared for the first field excursions in early 2026. Project capacity was further strengthened by acquiring a Pulse Amplitude Modulation (PAM) system for physiological measurements and expanding the technical team.

Simultaneously, we have created a parallel list for sampling animal species. This list spans several taxonomic groups, from arthropods to mammals, and was developed with INPA's support to address conservation needs in Israel (Table 2, list of fauna). The selection of specific sampling sites is now underway, following the strategic program established for plant sampling to ensure collections are made under comparable environmental conditions.

Work Package 4 — Outreach, Education, and Stakeholder Engagement

In addition to our close collaboration with INPA to ensure that our developments meet their needs, we have begun a series of meetings with other potential partners, including the Ministry of Environmental Protection, the Ministry of Agriculture, and the Israel Antiquities Authority.

Furthermore, the first IBCC conference will take place in **September** (final date to be announced soon), and will feature presentations from each project team, roundtable discussions, and guest lectures on relevant topics.

In parallel, we plan to hold a series of IBCC-wide Zoom meetings throughout the year, during which each work package will present updates on progress made to date. Additional details and exact dates will be shared soon, and partners are encouraged to stay tuned and reserve time in their calendars once the schedule is announced.

Table 1, list of key plant species IBCC.xlsx

Table 2, list of Fauna .xlsx

15 HotSpots IBCC 2026.pdf