Freshwater ecosystems are amongst the most productive, biodiverse ecosystems on Earth, and more efficient at storing carbon. Unfortunately, these ecosystems are also amongst the most impacted by human activity, and climate change will only exacerbate the pressure on freshwater resources in years to come. This is particularly true for the African continent, which hosts a wealth of wetlands and freshwater species. In this paper we introduce BIRDIE, the South African biodiversity data pipeline for wetlands and waterbirds. BIRDIE leverages two long-term citizen-science programmes that have been running in South Africa for more than two decades: the Southern African Bird Atlas Project and the Coordinated Waterbird Counts, together with other environmental layers, such as the South African Wetland Inventory. Its objective is to link nation-wide waterbird monitoring datasets with wetland conservation managers, by streamlining data processing and analysis, and presenting management-useful indicators through web services and on an online dashboard. Our web application was designed to present indicators that are easily accessed, visualised and interpreted. Statistical analyses require technical knowledge and are time-consuming. Therefore, having their outputs pre-computed and readily available could dramatically increase the impact of the data on conservation action.