Biography: Dr Frank Ingwersen

Born in Kerang Victoria 13 November 1942

Early education was in Warrnambool Victoria and later in secondary college in Melbourne before completing a BSc majoring in Botany and Genetics with a minor in zoology, at the University of Melbourne.

During the undergraduate years he found professionally relevant employment during university vacations in organisations including ICI Agricultural (now Orica) at Croydon, Forestry School at Melbourne University's Mt Disappointment forest and spent a part time year as a botanical worker with the Department of Fisheries and Wildlife, conducting a survey of the artificial Lake Serendip near Avalon.

In the summers of 1965-6 and 1966-7 Ingwersen was part of the National Botanic Gardens stocktake and general herbarium work teams as a temporary seasonal worker with the grand classification of Gardener Grade 1. However, the botanist-in-charge, Dr Marie Elizabeth (Betty) Phillips also provided other work and in each of those seasons, Ingwersen and another staff member, travelled to collect plants in remote areas: the Grampians Range in Victoria and the Little Desert near Horsham; the south coast of NSW and Eastern coast of Victoria and again, through the dry Lower Snowy River Valley and Victorian Highlands with the then recently appointed associate botanist, Elizabeth Caroll (later E Hayden). Dr Phillips also took pains to introduce the seasonal workers to the botany and ecology of her beloved Snowy Mountains where she had worked for the first snowy Hydro scheme on soil conservation ecology. The group spent days collecting specimens and seed at Happy Jacks Plain, and rebuilt the access track to Dr Phillips' Hut, and to the Botanic Gardens Annexe at Mt Gingera (which later was abandoned as part of the Botanic Gardens). Already, he had encountered the complex and fascinating range of sub-alpine vegetation during the senior botany camp at Lake Mountain near Melbourne. Dr Phillips reinforced his interest and later research in mountain region ecology and support for the Snowy Mountains in Kosciuszko and Namadgi national parks, serving on various advisory committees.

> Notable influences were the University of Melbourne staff who were dedicated to both research and teaching: Dr David Ashton, Dr (Prof. later) Ray Specht, Dr (Prof. later) Carrick Chambers and in Zoology and Genetics, Dr John Thompson and Prof. Peter Parsons and the heads of those departments, Prof. John Turner and Prof. Michael White.

On graduating Ingwersen took a position in Darwin in January 1967, as a Botanist Class 1 within the Commonwealth Department of Territories in the Animal Industry and Agriculture Branch, Land Resources Section.

In the Northern Territory the work was basic land-characterising surveys to support the development of the Territory's leasehold pastoral and agricultural lands. Ingwersen recorded plant species and forest, woodland and grassland characteristics in survey sites that were sampled for soil and land physical characteristics and in the course of this work had to rapidly acquire a knowledge of tropical taxonomy (an understandable gap in the Melbourne background), and understand the dynamics of the wet-dry tropics environment of northern Australia. He began to develop a systematic way of classifying species and site data using manual numerical methods. That had not been previously attempted in the areas examined, a major challenge in the era before computers. Mapping vegetation formed a major part of this work. A vegetation map based on aerial photo interpretation and the field work analyses was produced for the then, Munmalary buffalo station in the Alligator Rivers region, an area now within Kakadu National Park.

In 1969 Ingwersen was appointed as a Botanist class 2, in the Department of the Interior in Canberra, Soon changed to the Department of the Australian Capital Territory, and much later, with the coming of self-government in the ACT in 1988, this position became a local government one and he was in fact a founding member of the ACT Parks and Conservation service. The Canberra position was initially as a botanist (later it was more recognised as a vegetation ecologist) to work on all aspects of plant and vegetation conservation, develop protective legislation, attend to compliance matters and take part in public information programs to support the conservation of the ACT's biodiversity resources as they would now be described. This included representing the ACT on national committees such as ROTAP, NVIS/ESCAVI, Australian Alps Committee and local committees such as the weeds committee.

This position historically followed earlier work pioneered by Prof. Lindsay Pryor, Dr Marie Elizabeth Phillips and Dr Nancy Burbidge who worked in different areas of government, none of which had a major brief for landscape scale conservation as such.

Ingwersen began to systematically survey and map areas of the ACT writing descriptions and conservation advice to government as well as participating in many different activities that dealt with land management and vegetation conservation. Using analysis methods based on the developing computer methodologies available at CSIRO Division of Computing research, he classified and mapped vegetation types, initially producing a detailed vegetation map of the ACT's then, only declared nature reserve at Tidbinbilla. This report described the vegetation and the natural and historical land-use factors that had wrought the changes to the natural landscape since European settlement and in which a new conservation effort had commenced to restore vegetation and re-introduce elements of the wildlife that had been lost over 100 or more years. The mapping was based on parametric mapping principles carried out manually thereby foreshadowing later work that would employ geographic information system (GIS), modelling to achieve a similar result. The technical

analytical work in Tidbinbilla Nature Reserve was internationally published in the journal *Vegetatio*. The map was published and a summary of the vegetation details was available in pamphlet form. With his long-standing colleague, Jan Ward, a full species checklist of the reserve was published. Nature Trail interpretive notes for the early nature trails were also prepared. It must be acknowledged that during this work generous support from CSIRO Division of Computing research was provided, in particular from the world leader in the field of vegetation analysis using objective computer-based methods, Dr Mike Austin and his co-workers.

> Because of the small size of the cell that was undertaking the new conservation programs in the ACT Government, there was at that time a widely accepted and necessary practice of developing links, perhaps now better known as partnerships, between the small number ACT Administration conservation scientists and external specialists at in various CSIRO divisions and at the ANU, who were readily available in and generous with their time and access to the CSIRO mainframe computer.

At that time, a major part of the ACT administration's work encompassed an associated but separate the coastal enclave of Commonwealth, The Territory of Jervis Bay, that ceased in that relationship after self-government. Much of Ingwersen's work up till that change of administration was done there. Here, new analysis methods based on the developing computer methodologies available at CSIRO Division of Computing research were used to classify vegetation types and create a map of the vegetation types identified within the Territory. The results were published by the then new, Australian Government Publishing Service (AGPS) in 1976. Following a large fire in 1973, Ingwersen began detailed research into the specific strategies the flora of the area used to regenerate. Ingwersen was accepted by Prof. Lindsay Pryor as an MSc scholar and this work was completed in 1977 as his MSc Thesis under the supervision of Dr John Carnahan with whom he had previously established a connection during Carnahan's mapping of Australian vegetation types in the Northern Territory. The inspirational mentorship of Dr Malcom Gill, formerly part of the Melbourne teaching group, at the CSIRO Division of Plant Industry, was also integral to the success of the fire research. A joint project between Dr Gill (initiator and lead) and Ingwersen, on the flowering response to burning of grasstrees, using a remnant population at Tidbinbilla Nature Reserve, was published in the British *Journal of Applied Ecology.*

The Jervis Bay vegetation mapping facilitated an ecologically based prescribed burning and fire limitation plan to be developed for the Territory, the first to be based on such principles in any conservation reserve. Under the generous support of Dr Richard Groves, that laboratory made glasshouse and laboratory facilities available to supplement those of the ACT Conservation and Wildlife scientific group.

During these years Ingwersen was a regular guest lecturer at the then, Canberra College of Advance Education, now University of Canberra, and as an occasional teacher there experienced the transition from its previous status. Similar outreach to both teach and fulfil the public education role of his position involved lectures at Duntroon and the Canberra Institute of TAFE. For several years he assisted the ANU Botany Department with its coastal field trips to areas near Jervis Bay and also the University of Canberra environmental studies and design classes. The publication on Jervis Bay was used as the main text in field teaching in that area. There were talks to community conservation groups including the National Parks Association, The Canberra Field Naturalists and the Canberra Archaeological Society when aspects of the ACT's ecology could be displayed and explained.

Because of the areas in which he was working, there were multiple interactions with graduate students whose supervisors encouraged contact with professional workers in their field of studies. Notably this introduced Ingwersen to consideration of the relationship between environment and aboriginal occupation. An honours student, Frances. Hurrell working with Dr John Carnahan and Dr Ron Lampert (ANU) on the NSW side of Jervis Bay, later membership of the Canberra Archaeological Society and connections with Dr Josephine Flood, Prof. John Mulvaney and another graduate student who worked in the Gudgenby area, J Winston-Gregson, were opportunities to extend and develop interests in this field of research. Ingwersen successfully established three archaeological surveys under the then National Estate Grants program in the Jervis Bay, Gudgenby and Gungahlin areas. Possible relationships between vegetation, its history and landscape characteristics were considered through these connections. A strong relationship was established with an Honours student, Owen Evans who analysed flora diversity in the Snowgum woodland of the Brindabella Range. Evans was a temporary field assistant and later a co-worker, together with colleague Barry Griffiths, in the project that established Mt Ainslie and Mt Majura as significant nature reserves. As was often the case, Ingwersen was in effect a co-supervisor of several such students' work and the ANU and (later UC) often encouraged such students to maintain contact in this way. The Conservation and Agriculture Branch also valued the contributions made in this way to the growing body of knowledge of the biota and its conservation values. The Mt Ainslie and Mt Majura report on vegetation, its complex history of alteration and recovery due to early land-use practices in the ACT (when it was in New South Wales tenure) and its soils, was published by the AGPS in 1974. This study and that of Tidbinbilla, documented the relationship between historical politically driven changes to land tenure as a cause of vegetation and soil degradation in the landscape, as examples of more widespread processes in Australia that followed colonisation generally. Two seminal earlier studies had suggested that this factor was important historically and should be taken into account in conservation planning and modern-day policy development: *Ecosystems of the Monaro* by Dr Alec Costin and *Changing land use in the Canberra* region by Dr Robert Boden, another, long-standing

scientific and environmental management figure in the ACT who was generous adviser and commentator on the work.

A less quantitative vegetation mapping project covered the riparian corridor of the Murrumbidgee River and the Molonglo River with a seasonal associate undertaking extensive field work and air-photo interpretation. The maps were published locally to support further surveys, education and conservation planning in tis area.

A survey of Black Mountain Nature Reserve was also made and all vascular and non-vascular species were used in the data sets to attempt to detect small habitat variation across this small and rather uniform reserve. Jan Ward (BSc U Q'ld), an assistant to the botanist's position for many years, undertook much of the field work which was enhanced by her special interest in obtaining a comprehensive listing of mosses, liverworts and lichens. Soil descriptions were included at all sites. These taxa had not previously been incorporated into such vegetation analyses in the region. This work was used in supporting the development of Canberra Nature Reserve as the low hill country close to the Town Centres and nearby lands is now known. Ingwersen and Ward added vegetation community information to the studies already made of the basic flora by Max Gray and the eucalypt compositional analyses of Eddie Pook and Dr Ted Moore of CSIRO in the 1960s. Jan Ward was the mainstay of work to maintain an independent herbarium of reference specimens within the ACT organisation. Contrary to the opinion of some in existing institutions, it served well to support all field work and some other research inquiries. Jan Ward and Peter Ormay (B Nat Res, UC) were particularly valuable in its upkeep and getting species identified in house and checked at the Australian National Herbarium at the Botanic Gardens or CSIRO.

Ingwersen's methods of sampling and analysis were adopted by others, consultants who undertook for the Conservation Council of the ACT, three detailed ecological studies of the upland rocky and wet habitat vegetation types, the Upper Cotter Wilderness of Namadgi National Park and the Tennent- Blue Gum montane catchment areas of Namadgi National Park. Again, he was involved in survey design and methodological advice. Ingwersen also had some involvement in the initial planning stages an environmental study of the Cotter Catchment by the ANU Forestry Department. Associated staff were numerous over the long time span but permanent staff, Peter Ormay and long-term temporary personnel contributed to the often long remote days in the beautiful but challenging mountain terrain of the region.

With the coverage achieved over those years, it was time to review grasslands, initially, by existing staff but also, particularly through the recruitment of the outstanding grassland ecologist and then, Masters candidate at UC, Sarah Sharp. Ingwersen and Sharp set up grassland studies that had not been focussed on up till then and Sharp made a major contribution to understanding the lowland grassland and woodland margin

ecology of the ACT leading to the creation of new reserves and advice and limitations and planning as well as advising on conservation agreements on ACT rural lease lands. New lowland grassland reserves were derived from this surveys supporting herpetological and invertebrate surveys. In the Themeda grassland at Tidbinbilla, Ingwersen established exclosure plots supporting further research by his wildlife colleagues ANU students on the relative effects of native macropod and rabbit grazing.

From some earlier date, there was a long terms survey program to describe and as far as possible, map the vegetation of the Naas River and Gudgenby river catchments. These lands were substantially within Namadgi National Park, part of which had been covered by the 1974 ANU Cotter Survey and the Upper Cotter and Tennent-Bluegum surveys by Carole Helman and Phil Gilmour and associates. This was an ongoing collection of floristic, structural and soil site data which was concluded just prior Ingwersen's retirement from the ACT Government but it was produced a year later in his Ph D thesis. There was much detail on the botanical composition of the vegetation types using data analysis that reflected the earlier Tidbinbilla work but which was more sophisticated and linked to geographic information systems methods using computer programs not available in previous work where only manual methods could be used. Forest woodland and grassland, bog and heathland were covered and the associated soil types were also recorded. Ingwersen contributed to wide ranging programs. At the request of Dr Robert Boden, then regional coordinator for WWF project on centre of plant diversity, Ingwersen contributed two papers to *Centres of Plant Diversity; Vol. 3. Eds. S. D. Davis, V. H. Heywood and A. C. Hamilton. WWF and IUCN*.

Ingwersen, F (1995). Australia: CPD Site Au4. Kakadu – Alligator rivers region, Northern Territory, Australia:

Ingwersen, F (1995). Australia: CPD Site Au8. Sydney Sandstone Region, New South Wales, Australia:

Ingwersen contributed historical data to the project on long term vegetation resilience led by Assoc. Prof Richard Thackway.

Ingwersen was principal author of early endangered species and plant community actions plans for the ACT.

Action Plan No. 4. A leek orchid – *Prasophyllum petilum*.

Action Plan No. 5. A subalpine herb – *Gentiana baeuerlenii*. An endangered species.

Action Plan No. 10. Yellow box / Red Gum Grassy Woodland – an endangered ecological community.

Other varied activities included acting as an expert witness in compliance cases, occasional refereeing of articles, introducing computing and in particular, GIS systems to his work area, contributing to National Trust publication and the *Directory of Important Wetlands in Australia* ANCA, Canberra).

Dr Ingwersen retired from full time government work in 2001 and completed the PhD work, moving into consultancies in the ACT and the ski-field areas of Kosciuszko National Park. Following the devasting fires of

2003, he undertook monitoring of vegetation regeneration in study sites he had earlier set up when serving as a member of the Australian Alps Liaison Committee (now Australian Alps National Parks), in anticipation of the opportunity to document species responses after fire whenever it might occur. Ingwersen volunteered time and worked with ACT Parks staff and took contracts with NPWS Kosciuszko NP and Parks Victoria to observe, record and write reports on the data collected. It was an echo of the work on fire responses done at Jervis Bay and data had not up till then been gathered on all sub-alpine and montane species. The study added to a growing pool of knowledge on which to base conservation-oriented hazard reduction burning and special fire management policies.

Throughout his career, Ingwersen maintained memberships with professional bodies such as Ecological Society of Australia, Archaeological Society of Act, Professional Officers Association/CPSU (rep.) Systematic Botany Society, International Association of Vegetation Science

Dr Ingwersen continues involvement with the ACT and the southeast region of New South Wales through membership of the ACT Scientific Committee and the NPWS Southern Ranges Regional Advisory Committee.

[written by Frank Ingwersen in late 2025 and supplied to Murray Fagg (ANBG) in preparation for an entry in the CHAH Collectors & Illustrators website]