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IN MEMORIAM

## David John Trevis Hussell, 1934–2015

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David Hussell, whose ornithological contributions included important studies on the reproductive strategies of Arctic birds and the Tree Swallow, and who is known to many in Canada as the ‘father of migration monitoring’ for his leading roles in the development of the Long Point Bird Observatory and the Canadian Migration Monitoring Network, died suddenly of a brain hemorrhage on April 10, 2015. Aged 80, he was still active in field work and preparing manuscripts. David is survived by his wife, sons Jeremy and Peter, and two grandsons.

David was born in Winchester, England, in 1934, and later moved with his three siblings to Welwyn Garden City, just north of London. Other than David, his family was not much interested in birds, but he was given a copy of James Fisher’s 1941 book, *Watching Birds*, which contained a list of natural history organizations. Through some of those contacts, David met a few local children with similar interests. Within several years they were riding bicycles from London to the coast to visit bird observatories. David soon earned his ringing permit, and his siblings remember him trapping birds in the backyard with a drop-box triggered by pulling a string inside the house, where David was ostensibly doing homework.

Despite this interest, David didn’t realize ornithology could be a career, and he went to the University of London to follow his father into civil engineering. He nonetheless kept in touch with friends who were biology students at Oxford and joined them on several camping trips to study birds, including one to northernmost Norway to document behavior of Redwings in continuous daylight. This trip was notable in spurring David’s lifelong interest in Arctic birds, and introducing him to scientific study. (Also during this trip, the party stepped through a reindeer fence to set foot briefly in Russia—doubtless not advisable today.)

After earning a postgraduate diploma in concrete technology, David immigrated to Canada, in part to avoid mandatory military service in England. He arrived in Toronto in 1957 without any job prospects, but times were different then, and within weeks he was hired by the rapidly expanding Ontario Department of Highways. Almost as quickly, he joined the recently formed Ontario

Bird Banding Association. They had ambitions of starting a chain of British-style bird observatories along the shores of the Great Lakes, and in 1959 David was part of a small group exploring possibilities for a station at Long Point, on Lake Erie’s northern shore. He played a lead role in founding the Long Point Bird Observatory (LPBO) in 1960.

That same year David took a leave of absence from the Department of Highways to study breeding behavior of



David Hussell in Iceland, 1972. Photo credit: Erica Dunn

Sabine's Gulls in Alaska with several of his Oxford friends. On their way home they attended the 1960 AOU meeting in Ann Arbor, Michigan—David's first scientific meeting. He returned to his job for another three years, but spent most of his free time developing LPBO's programs and publishing his first ornithological papers.

Once he had saved enough money to do so, David quit engineering for good and enrolled at the University of Michigan. For his Ph.D., he spent 4 summers in the Canadian Arctic (Devon Island) studying clutch size of Lapland Longspurs and Snow Buntings. Prevailing theory held that birds raise as many young as possible, such that higher clutch size in northern regions resulted from longer days for gathering food. David found evidence that clutch size continues to increase north of the point at which available feeding time became constant. His 1972 paper in *Ecological Monographs* based on his doctoral research is his most frequently cited paper. He continued ever after to gather additional data from the literature, and at his death was writing a paper that demonstrated this result more definitively.

David's engineering background stood him in good stead throughout his career. He wrote very carefully, to the degree that his Ph.D. supervisor, H. B. Tordoff, couldn't find a single thing in his thesis to change. Mainly to prove he'd read it, Tordoff suggested a small wording change somewhere in the middle. David considered the suggestion, but politely declined as that would have changed his intended meaning. The thesis was passed as originally submitted.

During post-docs at the American Museum of Natural History and the University of Pennsylvania, David began to study breeding of Tree Swallows nesting in boxes at Long Point; work he continued for the next 40 years. He focused on three main questions. In the course of studying effects of food abundance and weather on timing of breeding and clutch size, David amassed an unparalleled long-term dataset on daily food supply. Parent–young interaction was a second topic of interest: How do nestlings signal hunger and how do parents vary their response in the face of differing levels of food availability? For insight into this system, David conducted field experiments, manipulating brood size and measuring parental response. Results were presented and interpreted using the classic economic model of supply and demand. Finally, David was interested in hatching asynchrony of Tree Swallows, investigating the circumstances under which different degrees of asynchrony might be adaptive.

The Long Point Bird Observatory hired David as its first Executive Director in 1974. When he accepted the job, some academic friends asked why he would waste his career working with volunteers at an isolated banding station. He took no notice, and managed to continue scientific publication while also developing the organiza-

tion. Programs he initiated in LPBO's early years included standardized daily migration counting, research studies on migrating and breeding birds, citizen science surveys on broad geographic scales, and training opportunities for young people. Even after his departure as Executive Director in 1982, David continued to make important contributions to LPBO, and took part in its eventual transformation into today's Bird Studies Canada (BSC): that country's foremost bird study and conservation research organization. BSC's primary programs consist largely of those developed by David in LPBO's early years, from the bird observatory itself to citizen science surveys at local, national, and international scales. The annual sponsored bird count that David began in support of LPBO has raised more than \$2 million for research and conservation of Canada's birds.

In 1972 David married Erica Dunn, a fellow graduate student, with whom he collaborated on many ornithological projects and raised two sons. In part to ensure a stronger financial future for his family, David left LPBO at age 48 to become a Research Scientist for the Ontario Ministry of Natural Resources. Although hired ostensibly to work on deer, he managed to direct much of his effort to establishing counts of migrating birds as a means of monitoring population change, especially useful for boreal-nesting species that other monitoring programs do not cover. David became known to many in Canada as 'the father of migration monitoring' for his work in establishing field protocols, publishing trend analyses and trend validation procedures, and leading the formation of the Canadian Migration Monitoring Network. This chain of independently operated observatories on the LPBO model (currently 25 sites spread across Canada) shares centralized data storage and biennial trend analysis. Following retirement from paid employment, David extended his work on migration to diurnally migrating raptors, collaborating closely with institutional partners to develop the continent-wide Raptor Population Index project.

David was delighted at age 72 to return to the Arctic. He spent his last 8 summers studying Northern Wheatears on Baffin Island, where he continued field work habits of a life-time: walking long distances daily, rigging finicky camera setups to automatically record nest visits, keeping meticulous records. He always wore proper trousers and a shirt with a collar—never blue jeans or a T-shirt—but this did not mean he was a natty dresser. Field clothes were thoroughly worn out before he could be coerced into discarding them.

A rather reserved man, David was always happy to work alone at his own slow-but-steady pace. He nonetheless turned voluble on subjects that interested him, and despite a serious mien he had a dry sense of humor that was appreciated by people who got to know him. He also enjoyed collaborating with other researchers, and his

lifelong involvement with amateur organizations monitoring migration was partly a conscious means of continuing interaction with young people. Though never supervising students as an academic, David influenced many by introducing them to fieldwork and scientific study. At the 2014 AOU Annual Meeting, for example, 3 volunteer field assistants from past years greeted him with the news that they had gone on to graduate school.

David's ca. 75 scientific publications (more than 50 as a sole author or first author) covered an unusually wide range of topics and species; he saw opportunities for research everywhere he looked. He was honored with numerous awards, including among others the Society of Canadian Ornithologists' Speirs Award, Hawk Migration Association

of North America's Maurice Broun Award, and the Linnaean Society of New York's Eisenmann Medal. He was an AOU Elective Member since 1976 and an AOU Fellow since 1991. Recognition was both for David's scientific work and for his dedication to building ornithological institutions that involved amateurs in bird study. He served on numerous boards and scientific advisory committees, and wrote constitutions and endowment fund guidelines (the latter used as models for guidelines adopted by AFO and AOU). Of all his mainly behind-the-scenes contributions, however, he was most appreciated for the entirely genuine respect he extended to beginning and amateur ornithologists, treating them as equals and inspiring them to work together on bird study to make valuable contributions to science.