Martin, K. 2007. Jamie Smith, University of British Columbia, 1944–2005. *Avian Conservation and Ecology - Écologie et conservation des oiseaux* **2**(1): 1. [online] URL: http://www.ace-eco.org/vol2/iss1/art1/

Essay

Jamie Smith, University of British Columbia, 1944–2005

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Key Words: *Jamie Smith memorial; Jamie Smith Memorial Mentoring Award in Ornithology*

As an "Easter diversion" while enrolled in Chemistry at the University of Edinburgh, Jamie Smith accompanied his friend John Shanks to Ailsa Craig in the Firth of Clyde to count North Atlantic Gannets. This trip precipitated his switch to the study of Zoology and a life-long interest in the ecology of bird populations, especially on islands. James Neil Munro Smith, known to most as "Jamie," was born on 1 May 1944 in Rothesay on the Isle of Bute, Scotland, and lived much of his early life with his grandparents while his parents were in Nigeria. Jamie graduated from Edinburgh in 1967 as a Zoologist, and completed a D.Phil. under Mike Cullen at Oxford (1967–1971). As a Smithsonian Research Fellow, he studied population variation on Darwin's Finches in the Galapagos with Peter and Rosemary Grant, before moving to Canada to assume a faculty position in the Zoology Department at the University of British Columbia (UBC) in 1973. For the next three decades, Jamie combined his love of birds, science, nature, and wild places to make major and sustained contributions to ornithological science, conservation, and education in Canada. He lost an 11-year battle to cancer on 18 July 2005 at his home in Vancouver, British Columbia.

Jamie's arrival at Oxford in 1967 coincided with the rapid growth of behavioral and evolutionary ecology. He got involved in the debates about how adaptation and natural selection shaped the behavior of individuals, population dynamics, and avian life histories. These topics underscored much of his research, and led him to long-term associations with scientists at Tinbergen's Centre for Teaching and Research in Animal Behaviour, the Edward Grey Institute for Ornithology, and Elton's Bureau of Animal Populations. Jamie's research on area-restricted searching by foraging songbirds had an immediate effect on the field by drawing attention to the constraints faced by "would-be" optimal foragers deciding where to feed and how much habitat to sample. His first paper, published in *Animal Behaviour*, with R. Dawkins in 1971, used lab-reared great tits and controlled the food density of "habitat patches" to test key assumptions about the perception of foraging profitability in birds. His Ph.D. research on food searching and habitat sampling of Song Thrushes and Blackbirds, using field observations and arrays of artificial baits, was published in two papers in *Behaviour* (Smith 1974a, b) and profiled in the first edition of *Behavioural Ecology* (Krebs and Davies 1978). With H.P. Sweatman, Jamie extended his Ph.D. research to test predictions by Royama (Royama 1992) and others that predators maximize efficiency by sampling habitats, spend more time where success is high, and depress prey numbers as a consequence. Their research supported these predictions, but also highlighted the constraints to optimal foraging by an individual caused by handling time, prey depletion, and social factors limiting access to food (Smith and Sweatman 1974). They concluded true optimal foraging is unlikely to be found in nature. Jamie's first four papers have been cited more than 600 times, and have generated important insights on individual variation and the constraints to the expression of optimal behaviors in nature. Jamie applied his creative blend of tests of scientific theory with empirical field research and simple elegant

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Sponsored by the Society of Canadian Ornithologists and Bird Studies Canada

Parrainée par la Société des ornithologistes du Canada et Études d'oiseaux Canada

field and lab experiments to questions in life history evolution, and population and community ecology throughout his career. Always, his work was grounded in ecological realism.

At UBC, Jamie and his colleagues began to elucidate the complexities of avian demography in North America by conducting classic studies of songbirds on small islands and the mainland, and successfully applied these data to evolutionary problems of broad theoretical interest. In 1974, Jamie assumed the lead of a 16-year field study, started by Frank Tompa in 1959, of an individually marked population of Song Sparrows on Mandarte Island, a small islet off the coast of British Columbia. The work on Mandarte Island focused on critical demographic parameters, including the functions of territoriality, food limitation, nestling condition, winter survival, predation, impacts of cowbirds, population regulation, life history evolution, and response to natural selection. Jamie's early work on Song Sparrows demonstrated experimentally heritable variation in morphological traits. He also showed a positive phenotypic correlation between fecundity and survival. However, in later work with Dolph Schluter, he demonstrated a negative genetic correlation, perhaps reflecting the positive effect of a common environment on both traits resulting in opposing natural selection. Peter Arcese (UBC) inherited the Mandarte Island project in 1991, and continues the field study with a productive team of students, post-doctoral fellows, and colleagues. With 32 years of data on Song Sparrows from Mandarte Island, several nearby islets, and studies on the mainland, the work of Jamie, his colleagues, and his successors stands out as one of the most extensive analyses of meta-population dynamics in birds.

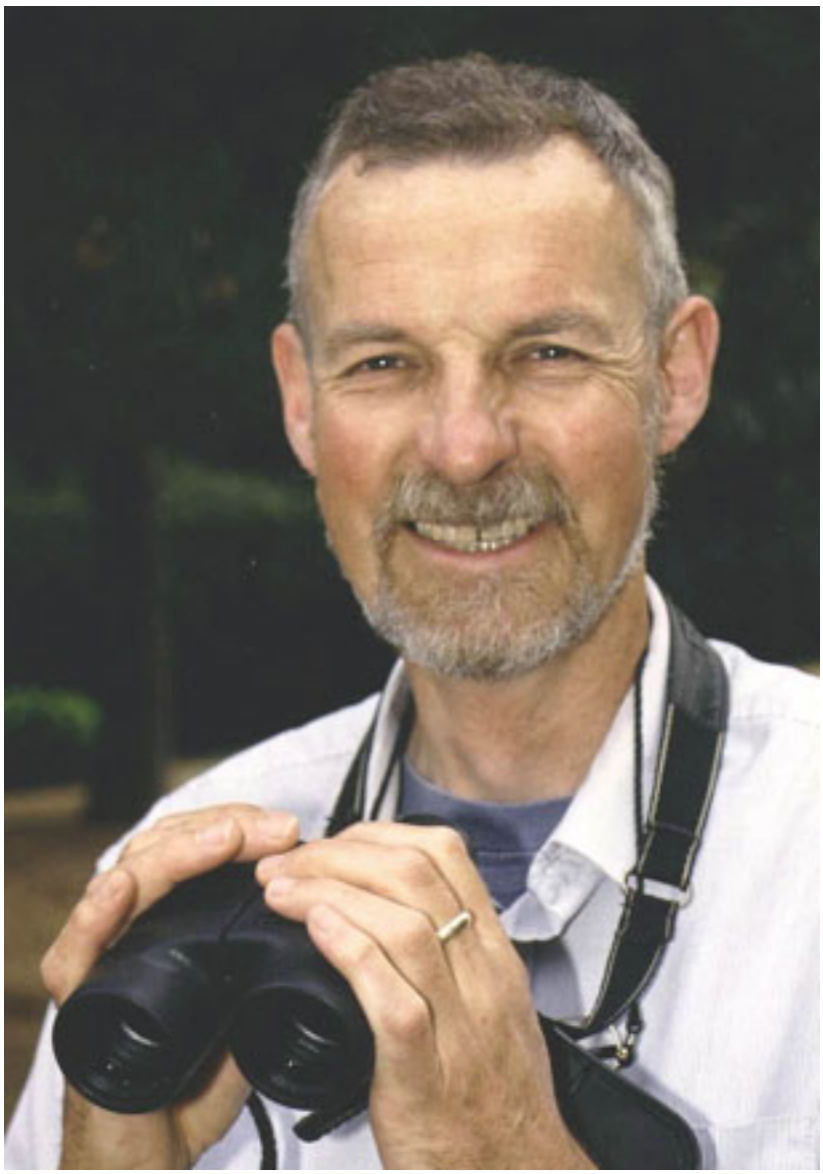
Since cowbirds arrived on Mandarte Island about the same time as Jamie, he became interested in the demographic consequences of bird parasites on both common and endangered species of songbirds. Despite the prevailing wisdom that cowbirds were ecological villains, he set out to determine their ecological role in songbird communities. With his typical insightful ecological approach, he first examined how hosts responded, and then focused on the impacts of cowbirds on host populations. In his multi-authored book on the "Ecology and Management of Cowbirds and their Hosts" (Smith et al. 2000), he determined that cowbirds were not increasing, that there was little evidence that cowbirds limit the population size of many host species, and most importantly, that cowbird control often does not result in increased populations of their endangered hosts. On Mandarte Island, however, cowbirds significantly reduced the reproductive success of Song Sparrows by depressing sparrow recovery after catastrophic population declines. Also, with a large-scale removal on three heavily cowbird-parasitized mainland sites, Jamie showed that sparrows produced more young in cowbird-reduced populations. This was sufficient to change his experimental removal sites from sinks to self-sustaining populations (Smith et al. 2002). Overall, his research on cowbirds contributed to our basic understanding of the ecology and behavior of host and parasite, further developed parasite–host co-evolution models, and the efficacy of cowbird management approaches.

In his last year, Jamie and coauthors completed a major synthesis of the Mandarte Island work in a book that Jamie illustrated, *Conservation and Biology of Small Populations: the Song Sparrows of Mandarte Island* (Smith et al. 2006). Sadly, he never saw the finished book, but he did have the satisfaction of completing a research synthesis of four generations of a scientific lineage. Jamie and co-authors used the Mandarte Island Song Sparrow Project and other island studies to review the breadth of problems that small isolated populations encounter, and discuss the progress made on understanding regulatory mechanisms and the impacts of environmental change. Jamie and his co-authors Lukas Keller and Jane Reid end the book with a thoughtful review of the evidence for the importance and generality of each of the major mechanisms for regulation and conservation of small populations. Jamie's legacy is most closely associated with his field study of the Mandarte Island Song Sparrows, for which he was awarded the Doris Huestis Speirs Award, the most prestigious award from the Society of Canadian Ornithologists/ Société des Ornithologistes du Canada (2000) and the Brewster Award from the American Ornithologists' Union (2002).

Over his career, Jamie took on many ecological orthodoxies (optimal foraging, survival–fecundity trade-offs, the role of invasive species in ecosystems). Rather than generating new theory, he was inclined to rigorous tests of new theories and the refinement of established concepts. From 1986 to 1996, Jamie was one of eight Principal

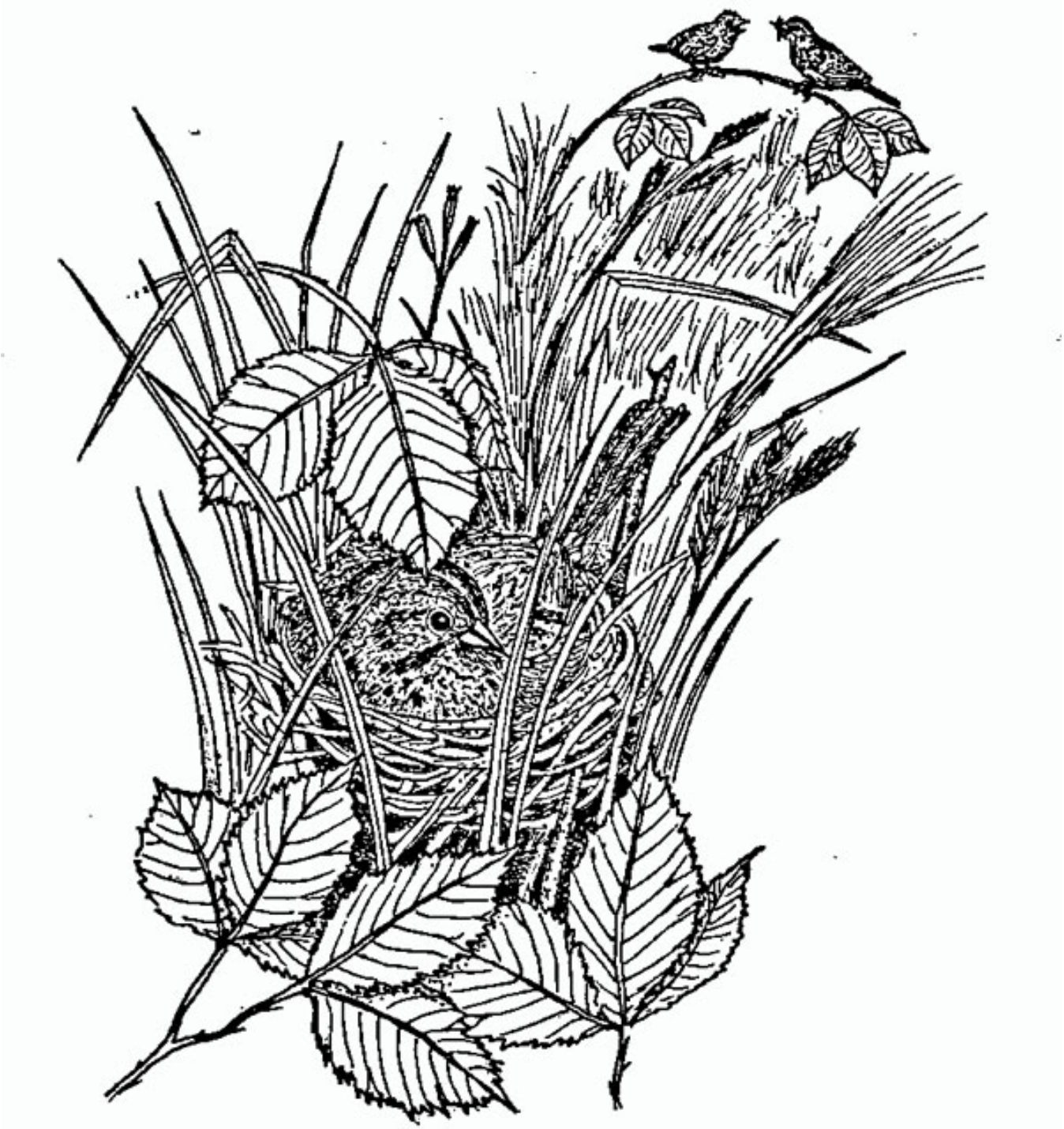
Fig. 1. Photo of Jamie on Mandarte Island.

Fig. 2. Photo of Jamie in the field. By permission of Blackwell Publishing, Inc.



This figure will appear in a condensed version of this memorial article, authored by Kathy Martin, in the April 2007 issue of Ibis.

Fig. 3. Sketch by Jamie—Song sparrow on nest. By permission of Oxford University Press, Inc.



Figures: Drawings of birds by Jamie Smith at beginning of chapters 3 (p.31) & 6 (p.89) from "Conservation and Biology of Small Populations" edited by Smith, J.N.M. et al (2006)
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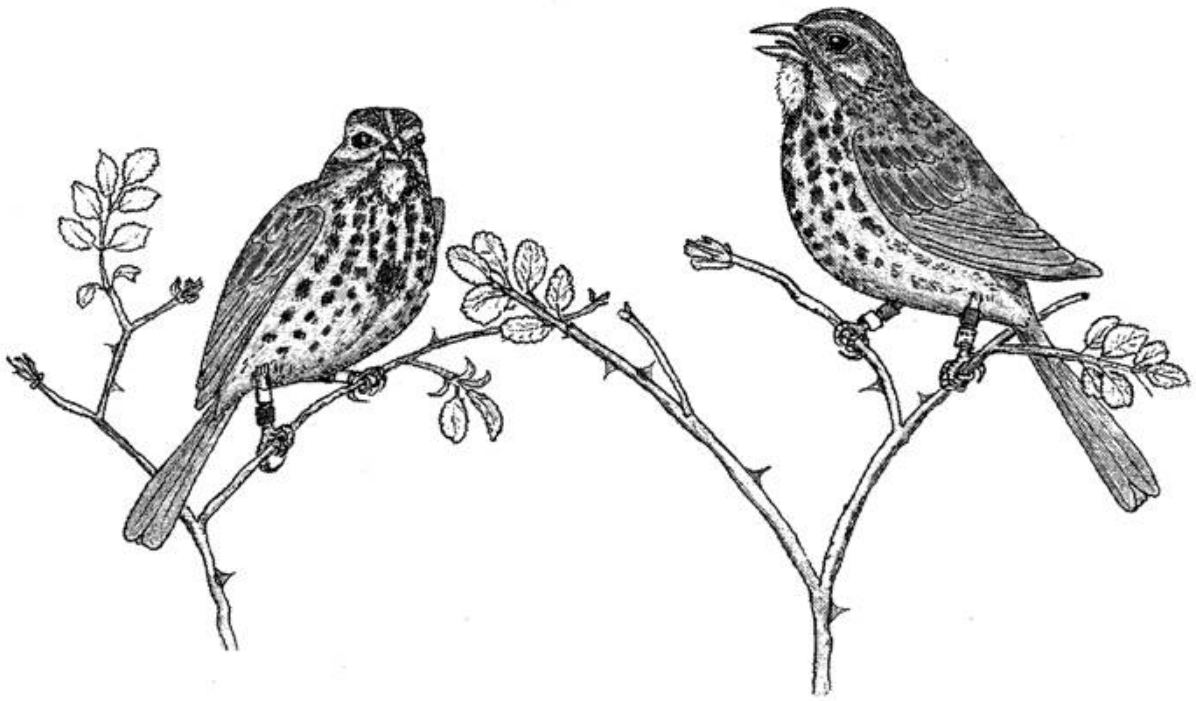
Fig. 4. Sketch by Jamie—A perching male song sparrow and a floater (right). By permission of Oxford University Press, Inc.



Figures: Drawings of birds by Jamie Smith at beginning of chapters 3 (p.31) & 6 (p.89) from "Conservation and Biology of Small Populations" edited by Smith, J.N.M. et al (2006)
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Investigators in the Kluane Boreal Forest Ecosystem Project, a large-scale experimental field test of vertebrate population regulation and community structure in the Yukon Territory, Canada. There, he directed studies of passerines and raptors. Jamie published on many topics in ecology including major papers with students on waterfowl, grouse, Goshawks, Great Horned Owls, other owls, seabirds, and forest, riparian, and alpine songbirds. With collaborators from around the world, Jamie contributed over 100 papers, three books, and many book chapters, primarily on birds, but also including work on insects, plants, amphibians, and marine and terrestrial mammals in arctic, temperate, and tropical ecosystems.

Despite the breadth and depth of his individual and team research contributions, an even greater strength was his talent for synthesis and critique of exciting new or nagging old problems in science. His ability to distill insightful nuggets from a diffuse research presentation was legendary. The broader ornithological public will greatly miss those probing “Jamie” questions and comments at seminars and conference talks.

Many will regard Jamie’s most enduring legacy as one of outstanding mentorship and tutelage in science at all levels. Jamie’s “influence list” (how many people influenced, how much and whose life was changed) is lengthy, as indicated by the many students and colleagues who kept in touch with him,

some for several decades. His love of nature was boundless and absolutely contagious, inspiring a generation of ornithologists. Students, colleagues, and the public were attracted to his crisp and critical scientific assessments, usually delivered with positivism, enthusiasm and humor. He supervised over 35 graduate students and nine post-doctoral fellows, in addition to countless undergraduate students. Jamie was a wonderful mentor, always supportive, concerned, and interested in the personal and professional fortunes of his colleagues and former students. His mentoring style was versatile and provided necessary guidance without hovering, and lots of latitude for students in an independent phase. There was high demand from students and colleagues for his incisive and often cartoon-illustrated feedback on research papers and proposals. His "red pen was ripping" until 2 days before his death!

Jamie, with his wife and fellow zoologist Judy Myers, was renowned for hosting social science events to allow graduate students and colleagues to meet scientists visiting UBC. Daughter Isla, currently in a Ph.D. program in Ecology (University of Alberta), and son Iain, completing a B.Sc. in Agro-Ecology (UBC), grew up with gatherings of scientists invading their home. After a relaxed meal and brew, the visitor was often roasted with energy or slowly basted on their research seminar depending on the resident–visitor dynamics. Many graduate students cite this as one of the most positive and influential aspects of their academic development at UBC. To acknowledge the importance of Jamie's mentoring contributions, in 2006 the Society of Canadian Ornithologists established The Jamie N. M. Smith Memorial Award for Mentoring in Ornithology (http://www.sco-soc.ca/jamie_smith/jsma_award.htm). The first award was given in 2006 to Dr. Marty Leonard, Biology, Dalhousie University.

Jamie was active in local and national naturalist societies, served on a variety of conservation boards and panels, and gave advice to conservation policy makers. He was a director of the Stanley Park Zoological and Ecological Society (Vancouver). In 2003, he was awarded The Kay Beamish Award for Nature Education for his contributions to conservation and education by the Vancouver Natural History Society. In his last years, he was an active member of the National Science Advisory Committee of Bird Studies Canada, something he could do by email when energy allowed. He helped write some of the early draft legislation for the Canadian Species At Risk Act, and he advised endangered species recovery teams for the Vancouver Island Marmot, Vancouver Island Goshawk subspecies, and the Northern Spotted Owl in BC.

In sum, Jamie Smith was a prominent Canadian ornithologist with international recognition, who will be remembered as a talented synthesist and staunch advocate of rigorous avian science. He was an insightful scientist, passionate conservationist, dedicated teacher, and gifted naturalist who maintained a healthy balance of work and play, dedication to family, and community service. Jamie accepted the harsh reality of his illness with courage, optimism, and immense dignity. He finished projects that were feasible to complete, devoting exceptional efforts to his book and to counseling students. To the end, he continued a large email correspondence with students, friends, and colleagues, many of whom did not realize the advanced stage of his illness. Jamie Smith leaves an enormous legacy of high quality enduring science. He trained an exceptionally large cohort of prominent researchers, educators, and other science professionals who now work throughout Canada and internationally. His untimely loss resonates strongly through many levels of ornithology and conservation.

Responses to this article can be read online at:
http://www.ace-eco.org/vol2/iss1/art1/responses/

Acknowledgments:

A shorter version of this tribute will be published in the April 2007 issue of Ibis. *A second tribute by Peter Arcese is also to be published in the April issue of* Auk.

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