

## Historical Perspectives

### Kenneth C. Balcomb III

(born 1940)

#### Short Biography

Kenneth C. Balcomb III was born in Clovis, New Mexico, in 1940 and spent his childhood in Albuquerque before his family moved in 1951 to Carmichael, California, where he spent his high school, and freshman and sophomore college years. As far back as he can remember, he had a strong connection with animals. After school and on weekends in Carmichael, he worked as caretaker of injured wildlife at a rehabilitation center and as a veterinary assistant at an animal hospital. After graduating from American River College in 1960, he went to the University of California at Berkeley where he enrolled as a Philosophy major in preparation for law school (Dad was a lawyer). In his senior year, however, he took a Fish and Wildlife Management course taught by Paul Needham and A. Starker Leopold that rekindled his passion for working with animals. Ken immediately changed his major to Zoology and transferred to the Davis campus of the University of California, from which he graduated with a Bachelor's degree in Zoology in 1963. For the next two years, he took a few graduate courses but mostly worked at sea and at the San Francisco bay whaling stations for the U.S. Department of Interior, Bureau of Commercial Fisheries, Marine Mammal Laboratory. His duties were to Discovery-tag whales in the eastern North Pacific Ocean and examine whale carcasses taken in commercial whaling.

In 1966, Ken worked for the U.S. National Museum as a field curator on a bird-banding project in the central Pacific Ocean; and in 1967, he joined the U.S. Navy where he was trained as an aviator and an oceanographic specialist. After his obligatory five-year Navy tour of duty was over, he took a leave of absence in 1972-1973 to enroll in graduate school as a Ph.D. student of Dr. Ken Norris at the University of California at Santa Cruz. Also in 1972, he worked briefly for Dr. Ed Mitchell of Canada's Department of Fisheries and Oceans (DFO), Discovery-tagging whales in the North Atlantic and examining whale carcasses taken off Newfoundland and



Nova Scotia. Somehow during this time, he also fit in a cruise on the schooner and sail training ship *Westward*, where he met and befriended the captain, Dr. George Nichols, a diving physiology medical doctor, scientist, and sail-training visionary hailing from Boston.

In 1975, when his final Naval service obligation was completed, Ken joined the staff of the Boston-based Ocean Research and Education Society (ORES), founded and run by Dr. George Nichols, to teach oceanography, marine mammal science, navigation, and seamanship aboard the elegant 144' barquentine, *Regina Maris*. George and Ken set out to photo-identify humpback whales in the North Atlantic Ocean and calculate their population size remaining after decimation by early 20th century whaling. In 1976, Ken launched his long-term study of southern resident killer whales in the Pacific Northwest, using the photographic techniques developed by Dr. Mike Bigg of DFO Canada,

Ken lives on San Juan Island, Washington State, where he continues his premiere study of killer whales in collaboration with government colleagues Dr. John Ford and Graeme Ellis at DFO Nanaimo and Dr. Brad Hanson at the National Marine Fisheries Service, Seattle.

## Whales in a Changing World

Kenneth C. Balcomb III

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Change is an inevitable feature of Earth's physical history; and, it is evident all around us that living things aboard this planet possess a tenacity and plasticity to "roll with the punches" that the physical world offers over time. Sure, some individuals and populations survive and some don't, but life in some form has gone on perpetually since its beginning hundreds of millions of years ago. The complex and elegant dance of the elements and energies within us all has been going on for a very long time. "Us" includes worms and humans and whales, of course; its composition is continuously changing with the changing physical world. The editors of *Aquatic Mammals* have graciously invited me to comment on my, perhaps, unique perspective on a brief lifetime slice of this change *vis à vis* whales and humans, so here it is.

I was born somewhere near Clovis, New Mexico, in 1940—slightly ahead of the baby boom of humans around the World War II era but behind the baby booms of whales of past decades and centuries. As a youth, I frequently wished that I had been born sooner so that I would have had the opportunity to see the vast number and variety of cetaceans that our forebears had systematically decimated since before the beginning of the Industrial Revolution. I missed that experience directly, but I read avidly of whaler, seafarer, and naturalist accounts of ocean voyages. And I nearly memorized many 20th century scientific reports and articles concerning whales, dolphins, etc. I do not know why I was afflicted with such an obsession about oceanic life in my early years when I was surrounded by sand, dust, and tumbleweeds in New Mexico and, in later years, by pavement and poison oak in central California. From a more recent reading of various excerpts from my family history, I suspect there may be some salty wobble in our family genetic code. We definitely had seafaring in the family tree, including at least one whaler branch of distant cousins in the Pacific Northwest.

Fortunately, I fell in with a crowd of folks with a similar wobble, and we are all more or less tolerated by a much larger crowd of hominids that seems slightly amused by or hell-bent on ignoring what we have to say about the plight of the animals we know. There are very few real opportunities for employment (outside the government or NGO) in our field in these modern times, and

those opportunities that were around in the past usually involved commerce and government. Still, our crowd is big enough to support a few meetings and publications, and we are remarkably accepting of quirks.

For the outsider and the newbie reader of this subject, I will make the assumption that you are not troubled about accepting concepts of evolution, photosynthesis, hard rocks, and soft life as true and factual representations (Descartes might say "perceptions") of various aspects of the world we live in. I do not "think" this planet was "created" just for mind-play or dominion by humans. Nor do I think we can ignore its physical realities that can hugely change episodically and abruptly, sometimes by our own actions. It is difficult enough trying to relate my wobbly personal perspective effectively to landlubbers who have not experienced nor been humbled by the perfect storm. And it is virtually impossible to elucidate some finer points in the foggy *bullsh\*t* of cherished belief systems filled with lots of denial baggage. I try to avoid those folks, if possible, but they seem to be getting more numerous.

I am of the firm conviction that humans (perhaps misnamed, *Homo sapiens*) are animals, albeit remarkable and highly evolved brainy animals. Likewise, whales are remarkable and highly evolved brainy animals, and we are very distantly related. We are ultimately connected to all beings in the Animal Kingdom. Moreover, we face many of the same physical challenges of a changing world; and many that are different, particularly in the aquatic environment. For me, it is the quest for understanding how these challenges are met that I find most interesting; the utility of the resultant understanding is secondary but may perhaps be useful to future generations.

After graduating from the University of California with a Bachelor's degree in Zoology in 1963 (and taking a few too many courses in Philosophy), I drove down to the whaling stations at Point Richmond on San Francisco Bay. I offered to wash dishes in order to participate in a whale research expedition that was heading out into the eastern North Pacific Ocean with Dale W. Rice from Seattle and Dr. Masaharu Nishiwaki from Japan. I had already been "hooked" on marine mammals, whales in particular, by visiting the flensing decks and collecting specimens

for my fledgling enquiry into the anatomy and physiology of these remarkable animals. I very much wanted to see the living animals with these world experts and learn from them. Courses and seminars by my comparative anatomy mentor, Dr. Milton Hildebrand, and physiologists such as Drs. Knut Schmitt-Nielsen, Gerry Kooyman, and Robert Elsner had lit a fire in me to specifically learn as much as possible about the mechanisms of diving mammals. My youthful reading experiences and genes had forced me to go to sea. I felt compelled to go on this expedition, but the cost to me for a “normal” life thereafter was immense.

Whaling for commerce in products for America is part of our national heritage, but it was waning by the 1960s, partly because of the decimation of many stocks of whales and partly due to a shifting ethical view in our society toward “animals.” My personal view of the latter is that we are all animals and that we must treat all other animals “humanely”—that is, we should not be cruel to them but accept that we have a different level of acquaintance with different types and species of animals. Some are companions, some are co-workers, and some are food. Some we don’t even know exist, or know what they look like, and I find that fascinating! Having no prior personal acquaintance with living whales, and being an omnivore in a family with a hunting tradition, I accepted a common notion that whales were suitable as food, even though the entirety of commerce in that food in America at the time was as pet food.

At that time, the “food” part didn’t bother me; what bothered me, which was also the purpose of this research expedition, was that whale stocks had been decimated (reduced to approximately 10% or less of their former numbers) by modern industrial whaling. Most “commercial whale species” had been depleted to near biological extinction by the 1960s, and the regulatory International Whaling Commission (IWC) had belatedly moved from being an organ of the whaling industry to being more of a “rational manager” of whaling, beginning with the appointment of the “Committee of Three,” later a “Committee of Four” scientists in the early 1960s (McHugh, 1974). Interest, research, and statistical analysis of the status of cetacean stocks came of age around this time and continue to this day. As a recent college graduate, I definitely wanted to be a rational participant in this endeavor, and I felt privileged to be involved in this research with such noted scientific luminaries, even as a dishwasher and as a whale-tagging marksman. Later, I was introduced to other international leaders on the Scientific Committee of the IWC and academia, from whom I learned and to whom I am indebted. I make no apologies for my association with “whaling industry” scientists

and non-activist academics in this way, although I recognize that there was and is a growing activism in America and elsewhere for “animal rights” in general and against whaling in particular. Some of the activist hyperbole has brought a certain unjustified taint to the cetological profession of yesteryear and the sincerity of its participants. Not long ago, signing onto a whaling ship was about the only known way a person could see these amazing animals, and it was high adventure for any youth.

Yes, I felt comfortable with a reasonable affiliation to classical anatomical and physiological research on whales, and a reasonable affiliation to “modern” whale population research. I was just beginning to investigate the possibility of a career in marine biology in the early 1960s when I stepped aboard the *m/v Lynann*, the catcher-boat chartered from Bob Casebeer for whale research in January 1964. Serendipitously, as a direct result of seeing John Dominis’s photographs of humpback whales (*Megaptera novaeangliae*) in *Life* magazine (2 August 1963), I had become enamored with photography of these amazing animals at sea. So, I brought along a camera. Some of my very first photographs were of killer whales (*Orcinus orca*) and an anomalously pigmented White-sided dolphin (*Lagenorhynchus obliquidens*) off San Francisco, beaked whales west of San Clemente Island, and humpback whales off Mexico. Little did I know at the time that these photos were early photo-ids that encouraged this particular rut in my cetological career. At the end of the first trip, Dale hired me as his assistant, and I Discovery-tagged whales and took photos for much of 1964 and 1965 for the Department of the Interior, Bureau of Commercial Fisheries, and the Marine Mammal Laboratory in Seattle. That was the only such job in America at the time, and I had lucked into it.

While *m/v Lynann* was in San Diego during one of our port calls, Dale, Nishiwaki, and I visited a marine park under construction (Sea World) and were given a tour of the facility by a chap named Don Zumwalt. We also were introduced to the trainer, Ken Burgess, who was working with ten dolphins for a show opening in March 1964. They were in the process of constructing a pool big enough to hold a killer whale in case anyone should figure out how to catch one. Later that same day, we had a great visit with Dr. Ray Gilmore who used to examine the whales at the Richmond whaling stations in the 1950s when the humpbacks in the region were decimated. Little did I know that Sea World would become so large and contrary to my understanding of killer whales decades later, or that humpback whales would become so important to my later research ventures. Had I known, I would have asked Don and Ray many more questions.

Sometime later on another port call to San Diego (January 1965), I met Dave Waller who, like myself, was temporarily employed by the Department of Interior, Bureau of Commercial Fisheries. Dave was the first person to inform me that thousands upon thousands of spotted (*Stenella attenuata*), spinner (*S. longirostris*), and white-belly dolphins were drowned annually in a developing “tuna-porpoise” purse seine fishery based from San Diego (see Perrin, 2009 – *Aquatic Mammals* Historical Perspectives essay). I should have asked Dave more questions, too. Whaling, captivity, and incidental killing of cetaceans were, and still are, the big marine mammal issues of our times. In recent decades, we can add pollution and climate change to our big issue list.

With the Vietnam War raging, and my draft eligibility status nearing expiration, hence being prime for the draft, I tried to temporally “dodge the draft” by signing on to a yearlong stint in 1966 with a Department of Defense funded study of central Pacific Ocean seabirds—the Pacific Program. That was very high adventure and hard work, and it led to my taking the first photos ever of living Fraser’s dolphins (*Lagenodelphis hosei*) and Longman’s beaked whales (*Indopacetus pacificus*) in the Central Pacific Ocean; however, it took many years for specimens of either to be collected before the photos could be certainly identified (Perrin et al., 1973; Pitman et al., 1999). The draft-deferrable “bird-banding” attempt didn’t work by the way. Still, it took me to places where few cetologists have ever been. Besides seeing “new” beaked whales and dolphins for the first time (actually rediscovering them), one of my highest moments of excitement was when I picked up a sooty tern (*Onychoprion fuscatus*) banded 26 years earlier by Robert Cushman Murphy in 1940! Nobody had any idea that a tern would live so long. Amazing!

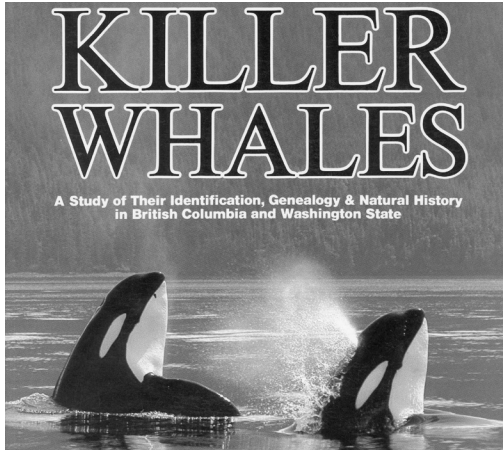
In 1967, I reported for duty and flight training at Naval Air Station Pensacola, Florida, in my final and successful attempt to dodge the draft into the U.S. Army. By the time I received my “wings” two years later, the need for disposable pilots had diminished, and I was thrown into the “Briar Patch” of SOSUS (acronym for Sound Surveillance System) operations. Wow! Things could not have been more spectacular! It was like being sent to magic class and then being required to perform said magic from remote shore locations about which I was sworn to keep secret. In my office, I could listen to whale sounds underwater from thousands of miles away! After the Longman’s sighting, I had developed a fascination with beaked whales. While beach-combing after hours at my various remote duty stations, I collected three Cuvier’s beaked whale (*Ziphius cavirostris*) specimens, one dense-beaked whale (*Mesoplodon densirostris*) specimen, and

countless dolphins and porpoises for my dissection and long-dreamed-of whale museum. After serving my obligate five years in the Navy, I topped it off after asking for and receiving a two-year extension on the advisory staff of the Commander of U.S. Naval Forces in Japan, where I visited all of the existing whaling stations and most of the small cetacean fisheries in my off-duty hours. I learned to speak the Navy jargon and a skosh of Japanese. I greatly respect both military service and Japanese culture, but my soul was certainly taking me toward a more pacifist career in cetology. Nonetheless, I shall forever be thankful to the Navy for providing me with a good awareness of operational and physical aspects of underwater sound—a subject so out of ordinary human understanding and appreciation that it is easily distorted in media reporting and in bureaucratic gobble for the appearance of regulation. I shall also be forever thankful for the generous introductions made for me by senseis Nishiwaki, Ohsumi, and Kasuya in remote villages of Japan where I was allowed to examine cetaceans that had been caught in various fisheries. Around this time, I was accepted as a Ph.D. student at the newly constructed University of California at Santa Cruz for a bit of formal education.

Fresh out of the Navy in late 1975, I was faced with two options for future study of whales: (1) count up all of the killer whales in Puget Sound for Dale Rice and the NMFS’s National Marine Mammal Laboratory of Seattle; or (2) photo-identify and calculate the population of humpback whales in the western North Atlantic Ocean for Dr. George Nichols and the Ocean Research and Education Society of Boston. Two oceans, two engrossing projects! How does one choose? I discussed these options with my graduate advisor, the eminent Dr. Ken Norris, and followed his suggestion to do both, plus continue my thesis write-up on the natural history of Baird’s (*Berardius bairdii*) and Arnoux’s beaked (*B. arnuxii*) whales (Balcomb, 1989; thanks to Sam Ridgway for patient and thorough editorial guidance). The killer whale study would be relatively easy—Mike Bigg had already photo-identified virtually all of the killer whales in British Columbia, so I simply had to follow his giant footsteps and extend the study to Washington State. The North Atlantic humpback study would be a bit more challenging because the study area is large; but Steve Katona and Scott Kraus (1974) had a great start on a humpback photo-identification catalogue off New England, and Winn et al. (1975) had identified Silver Bank as the major humpback whale breeding ground in the North Atlantic. There also were known to be lots of unidentified humpback whales in other ocean patches that we could visit by tall ship such as George offered. Pieces of cake! All we had to do was do it.



Mike Bigg, his two protégés Graeme Ellis and John Ford, and I spent summers and holidays boating around the Pacific Northwest inland marine waters taking pictures of whales and making acoustic recordings, and so on. Mike and I figured that about five years of this fieldwork would provide not only an exact count of how many killer whales lived in the Pacific Northwest, but it also would give us a handle on their vital statistics—lifespan, mortality/survival rates, age at sexual maturity, etc., in case anybody wanted to know such stuff (Figure 1).



**Figure 1.** Our first book cover with Dr. Mike Bigg, visionary pioneer of photo-identification of killer whales in the Pacific Northwest

George Nichols kept his word and bought a 144' barquentine, the *s/v Regina Maris* (Figure 2), in the Mediterranean and sailed her back to Boston with Irving Johnson and crew to be refitted as a school/sail training ship for ultimate use as a whale research platform. We filled the boat with students for ten years; in winters, we photo-identified and recorded humpback whales on Silver Bank and around the Caribbean. I spent parts of several summers aboard *Regina* following humpback whales around Newfoundland and Greenland, while my colleagues, Perran Ross and Judy Perkins, did the bulk of ORES's research on humpback whale summer grounds in the western North Atlantic. In 1979, we conducted a brief one-year expedition to the Pacific Ocean, from Panama to the Galapagos to Alaska and back, but *Regina's* sponsors were east-coasters and wanted her back in their pond.

The *Regina Maris* experience was a fairy tale for almost all who knew her; and over decades, thousands did. There is nothing more magical than sailing on a tall ship across the ocean, surging forth on each swell in near silence except for the hissing of water against the hull, driven only by the wind . . . constantly looking for whales

from atop the royal yard or photographing them from the bowsprit. We contributed 1,356 humpback fluke ID photographs to the North Atlantic catalogue, increasing it ten-fold at the time. We published the first mark-recapture estimates of the western North Atlantic humpback whale population (Balcomb & Nichols, 1982), and a historical summary of the North Atlantic humpback whale research in the West Indies is in preparation by Kennedy et al.



**Figure 2.** The *Regina Maris*, queen of the sea, a wooden hull, three-mast barquentine built in 1908 in Denmark, served as a sail training ship and a whale research vessel for the Ocean Research and Education Society, Boston, from 1975 to 1986.

By 1984, whale photo-identification techniques had become accepted as providing a reasonable approach to studying large whale populations. In general, the research paradigm had effectively shifted from examination of carcasses taken in whaling to the benign study of living whales utilizing a variety of techniques. Molecular genetic and telemetry techniques began to come of age at this time and are still improving with each year and with each new student. Not all nations and cultures have made this shift simultaneously, of course, but for elegance and depth of knowledge about cetaceans, the benign methods are far superior and much less consumptive than lethal methods. In 1990, the landmark IWC publication, "Individual Recognition of Cetaceans" came out, summarizing scores of studies on a wide-ranging cast of species, with humpback and killer whale studies well-represented.

Also in 1990, my then soul mate Diane Claridge and I shifted our winter focus from photo-identification of by then well-known humpback whales in the Atlantic and Pacific Oceans to photo-identification of a lesser known population of bottlenose dolphins (*Tursiops truncatus*) found on the banks of the Bahamas, Diane's homeland. Kim Parsons (2002), our assistant and colleague, did her Ph.D. on the molecular genetics of these dolphins by collecting scat from our known individuals that could be followed in the gin-clear waters in the "sea of Abaco." John Durban (2002), another assistant and colleague, did his Ph.D. analysis of this entire dolphin population with sophisticated Bayesian statistical techniques. Almost as a lark, we ventured offshore and photographed beaked whales, which were little known worldwide except from strandings and a few historic fisheries. I must admit that I was astonished and excited when we "matched" an individual dense-beaked whale after a few winters. We ultimately developed a catalogue of about 130 individuals, plus a catalogue of about 35 Cuvier's beaked whales with repeated observations during a ten-year period. Collecting scat from these whales for molecular studies was more of a challenge than it was for dolphins, but we eventually figured out that this could be done during their "bounce dives" near the surface when they were recharging their oxygen stores between their deep hour-long dives. Support for these studies in large part came from the Earthwatch Institute, which also sent us scores of eager and helpful volunteers for more than a decade. The Earthwatch Institute also supported two decades of our killer whale summer studies in the Pacific Northwest. I believe its sponsors and participants are to be commended for their continuing support of many studies throughout the world that otherwise would not be funded (see [earthwatch.org](http://earthwatch.org)).

On 15 March 2000, the first day of one of our Bahamas Earthwatch Teams, an event occurred that literally blew everything apart: 17 whales, many from our catalogue population, live stranded almost simultaneously along 60 miles of northern Bahamas bank and island shoreline; many inexplicably died within hours (Figure 3). I had previously attended several mass strandings of cetaceans, and I had witnessed oikomi cetacean drives in Japan. In those events, the subjects died or were euthanized/killed over a time period of days—not dying within hours or less as in the Bahamas incident. I had read about a similar mass stranding of beaked whales that occurred in Kyparissiakos Gulf, Greece, in 1996, that was associated with NATO military testing MF and LFAS sonar equipment (D'Amico, 1998; Frantzis, 1998). I had calculated (based upon my Naval experience) that the received level of these sonars at the whales was well below the 180 dB re: 1  $\mu$ Pa RL considered safe exposure. The big question at the time was, "Can sonar kill whales? If so, how?"



**Figure 3.** Two whales live stranded on 15 March 2000 as a result of a U.S. Navy sonar exercise in the New Providence Channel, Bahamas. *Top:* Cuvier's beaked whale (BMMS 00-03); *Bottom:* a Minke whale (BMMS 00-12).

I did not know on 15 March 2000 whether there had been a military sonar exercise in the Bahamas, but I did know that there was a very sophisticated naval base nearby, known by the military acronym AUTEK, that would likely have continuous acoustic recordings of any underwater sound in the region. There was also a hydrophone system near the mid-Atlantic ridge and the remains of the Atlantic SOSUS network that might have recordings. So, I called my former Norris classmate and colleague, Bob Gisiner, at the Office of Naval Research and asked that he try to secure any such recordings that might be available; I received his verbal pledge that any specimen materials that I might collect from the strandings would be objectively examined for evidence of trauma. At last, we might have real data and specimens to address the question. Another former classmate and colleague, Roger Gentry, at NMFS headquarters, counseled me to be patient whenever I thought things were moving too slowly in the official investigation of this incident.

Ultimately, the Navy did confess that there had been a sonar exercise in the Bahamas on 15 March 2000; ultimately, they did acknowledge that the sonar “caused” the mass stranding (Evans & England, 2001). Still, the precise mechanism and sonar levels that caused the disturbance and deaths are still under study. To me, it was always more than simply a matter of being another type of “drive fishery” or “drive hunting,” whereby animals are killed by intentionally (or unintentionally) herding them into unsurvivable situations, stranding cetaceans on beaches or stampeding buffalo off cliffs, for example. There is also the looming possibility that the intense sonar pulses themselves are causing physical trauma and physiological distress that may not be survivable for an animal whose *retia mirabilia*, airways, hearing, and vestibular system are remarkably complex and adjacent (Balcomb & Claridge, 2001; Cranford et al., 2008). Perhaps simply because of extreme avoidance responses, these animals could be experiencing “the bends” that divers can tell you is very painful and can be lethal. Whatever, it is inhumane and wasteful to injure and kill whales, or any animals, for military practice, even if it was not intended.

The Bahamas incident ultimately provided the impetus and some very fresh specimens useful for sophisticated inquiry into the anatomy and physiology of these remarkable diving mammals. The information is slowly coming out and illuminating our understanding of their exquisite adaptations to the aquatic environment. A lot of money has been spent on various aspects of this “sonar problem” in the recent decade, and much has been spent on publicity, in part due to a changing worldview

perspective in which whales are less perceived as “food” and more perceived as desirable “icons” of a healthy environment. Quite a lot of very fancy technological gadgetry have been incorporated into D-tags and satellite telemetry, etc., that have been developed and are applicable to a great variety of cetaceans and questions.

For my twilight tour (Navy jargon), I have retreated to the intellectual safety of simply counting and documenting every killer whale, regardless of ecotype, that passes by my window in the Pacific Northwest. Chances are that I have met its mother or father, or even its grandmother or grandfather, sometime in the past. That is great fun! These whales exist in families in the truest sense, and they provide a poster-child model for sociobiology and networking studies. In retrospect, our whaling, drive-killing, and capture of cetaceans for any purpose has been a bit arrogant and terribly clumsy. I collect a little whale poop now and then, and give it to colleagues who let me know about paternities and hormone levels (Ayers, unpub. data, 2010; Ford et al., in press). I swish a net around in trail of known individuals for “prey samples,” usually scales, that my colleagues use to study their diet (Ford et al., 2009; Hanson et al., 2010). I guess that I will never get tired of seeing these amazing animals, and I count myself lucky that I get to see them in the “wild” versus in aquaria. For some, captivity may offer the only chance to see living representatives of these amazing animals, but the most fascinating part of their life takes place beyond their “fence” (Figure 4).

Over the years, my own perspective has changed as a direct result of getting to know many whales “individually”—from Taku (K1, SRKW, *O. orca*), to Humphrey (wayward Pacific *M. novaeangliae*), to the healthy but disoriented BMMS 00-03 (*Z. cavirostris*) that I pushed back to sea in the



**Figure 4.** A southern resident killer whale (J3 – adult male SRKW) cruising the Seattle waterfront in 1976, the first year of the “Orca Survey”





**Figure 5.** Various humpback whale friends; the breach was an anonymous whale in Banderas Bay, Mexico; the fluke photo is of “Humphrey,” the famous whale that swam up the Sacramento River before being escorted back to San Francisco Bay and the Pacific Ocean; and the underwater photo is of “Batik,” who played around *Regina Maris* on Silver Bank, acting like she remembered us from Massachusetts Bay.

Bahamas when my “scientific” instincts were to try to keep it captive in a lagoon for study. At that very moment, the whale was another being with a life of its own to live, and a will to do so, not mine to take for science or experiment. Keiko,

Meg, Lolita, Bahama Mama, Batik, Springer, and Luna, among many others, have captured my soul and are indelibly lodged in my mind, as much as the white whale was for Ahab (Figure 5). I have become convinced that these cetaceans are not our rightful food nor are they simply our animate icons (a human concept) to be cherished, captured, or killed in furtherance of human beliefs and industries. They are fellow beings, perhaps even fellow free spirits, that are passing through time on this planet of constant change; we have much to learn from them if we will but try. I don’t know if they possess minds (like ours) in the water, but they do have very large brains that are used very cleverly, and they were remarkably successful at developing societies and amazing adaptations for exploring their ecosystems long before we came along. Who knows, they may be remarkably successful when we are gone, if we don’t manage to extinguish life itself.

I really like Sam Ridgway’s (2008) inclusion of Mahatma Gandhi’s quote in his *Historical Perspectives* piece: “The greatness of a nation and its moral progress can be judged by the way its animals are treated.” I would extend that to say how its wildlife fellow beings are treated, and I would remove any thought that we possess them in any way. It is more that we travel with them through time on this planet we call Earth, but I am sure Gandhi knew that.

#### Literature Cited

- Balcomb, K. C. (1989). Baird’s beaked whale *Berardius bairdii* and Arnoux’s beaked whale *Berardius arnuxii*. In S. H. Ridgway & R. Harrison (Eds.), *Handbook of marine mammals* (Vol. 4, pp. 261-288). San Diego: Academic Press. ISBN 0-12-588504-0
- Balcomb, K. C., & Claridge, D. E. (2001). A mass stranding of cetaceans caused by naval sonar in the Bahamas. *Bahamas Journal of Science*, 8(2), 2-12.
- Balcomb, K. C., & Nichols, G. (1982). Humpback whale censuses in the West Indies. *Report of the International Whaling Commission*, 32, 401-406.
- Cranford, T. W., McKenna, M. F., Soldevilla, M. S., Wiggins, S. M., Goldbogen, J. A., Shadwick, R. E., et al. (2008). Anatomic geometry of sound transmission and reception in Cuvier’s beaked whale (*Ziphius cavirostris*). *The Anatomical Record*, 291, 353-378.
- D’Amico, A. (Ed.). (1998). *Summary record, SACLANTCEN Bioacoustics Panel, La Spezia, Italy, 15-17 June 1998*. SACLANTCEN M-133 with Annex A-CCC, Unclassified.
- Durban, J. W. (2002). *Bayesian methods for marine mammal population assessment*. Ph.D. thesis, University of Aberdeen, Scotland.
- Evans, D. I., & England, G. R. (2001). *Joint interim report: Bahamas marine mammal stranding event of 15-16 March*



- 2000 (P. Stewart & R. L. Gentry, eds.). Washington, DC: National Oceanic and Atmospheric Administration, 59 pp. Retrieved 23 July 2010 from [www.nmfs.noaa.gov/prot\\_res/PR2/Health\\_and\\_Stranding\\_Response\\_Program/Interim\\_Bahamas\\_Report.pdf](http://www.nmfs.noaa.gov/prot_res/PR2/Health_and_Stranding_Response_Program/Interim_Bahamas_Report.pdf).
- Ford, J. K. B., Ellis, G. M., Olesiuk, P. F., & Balcomb, K. C. (2009, September 15). Linking killer whale survival and prey abundance: Food limitation in the oceans' apex predator? *Biological Letters* [Online]. doi: 1098/rsbl.2009.0468
- Ford, M., Hanson, B., Hemplemann, J., Ayers, K., Emmons, C., Schorr, G., et al. (in press). Breeding structure and male reproductive success in a killer whale (*Orcinus orca*) population, *Journal of Heredity*, Oxford.
- Frantzis, A. (1998). Does acoustic testing strand whales? *Nature*, 392, 29.
- Hammond, P. S., Mizroch, S. A., & Donovan, P. (Eds.). (1990). Individual recognition of cetaceans: Use of photo-identification and other techniques to estimate population parameters. *Report of the International Whaling Commission* (Special Issue 12), 3-40.
- Hanson, M. B., Baird, R. W., Ford, J. K. B., Hempelmann-Halos, J., Van Doornik, D., Candy, J. R., et al. (2010). Species and stock identification of prey consumed by endangered southern resident killer whales in their summer range. *Endangered Species Research* [Online], 11, 69-82. doi: 10.3354/esr00263
- Katona, S. K., & Kraus, S. D. (1974) was a Xerox copy, but for comparison, see Katona, S. K., Harcourt, P., Perkins, J. S., & Kraus, S. D. (1980). *Humpback whales: A catalogue of individuals identified by fluke photographs*. Bar Harbor, ME: College of the Atlantic.
- Kennedy, A., Balcomb, K. C., deCalventi, I. B., Vasquez, O., & Clapham, P. (in prep.). *The humpback whale in the West Indies*.
- McHugh, J. L. (1970). The role and history of the International Whaling Commission. In W. E. Scheville (Ed.), *The whale problem: A status report* (pp. 305-335). Cambridge, MA: Harvard University Press. ISBN 674-95075-5
- Parsons, K. M. (2002). *The use of molecular and observational data to infer the structuring of bottlenose dolphin populations*. Ph.D. thesis, University of Aberdeen, Scotland.
- Perrin, W. F. (2009). Early days of the tuna/dolphin problem (Historical Perspectives series). *Aquatic Mammals*, 35(2), 292-305.
- Perrin, W. F., Best, P. B., Dawbin, W. H., Balcomb, K. C., Gambell, R., & Ross, G. J. B. (1973). Rediscovery of Fraser's dolphin *Lagenodelphis hosei*. *Nature*, 241, 345-350.
- Pitman, R. L., Palacios, D. M., Brennan, P. L. R., Brennan, B. J., Balcomb, K. C., & Miyashita, T. (1999). Sightings and possible identity of a bottlenose whale in the tropical Indo-Pacific: *Indopacetus pacificus*? *Marine Mammal Science*, 15(2), 531-549.
- Ridgway, S. H. (2008). History of veterinary medicine and marine mammals: A personal perspective (Historical Perspectives series). *Aquatic Mammals*, 34(3), 471-513.
- Winn, H. E., Edell, R. K., & Taruski, A. G. (1975). Population estimate of the humpback whale (*Megaptera novaeangliae*) in the West Indies by visual and acoustic techniques. *Journal of the Fisheries Research Board of Canada*, 32, 499-506.