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For the Health of the Sea: In Search of an Expansive "Land Ethic" in Turkish Maritime Literature

> Say İstanbul and I think of
> A colossal fishing weir
> One stretch a rust-colored web
> Pulled tight at Beykoz
> Another sagging at Fenerbahçe
> Forty blue tuna in the weir
> Wheeling like forty millstones
> When you say blue tuna you mean
> Blue tuna the king of fish
> Shot through the eye with a Mauser
> Sea-fans uprooted in the sea
> The weir a bowl of blood now
> The glass-green water turbid
> In the blink of an eye forty blue tuna
> Bedri Rahmi Eyüboğlu, from "İstanbul Destanı" ["İstanbul Saga"], 242

Half a century after its publication, the striking description of the death of a swordfish that had just been harpooned in *Deniz Ağacı* [The Tree of the Sea (Sea-Fan)] (1962), written by the preeminent novelist of Turkish sea literature, Yaman Koray (1943–2006), gains new significance. Ahmet, the central character (the harpooner) in the

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novel, informs his fishing comrade about the prolonged death in the eyes of the swordfish that had just been caught: "While the death of other fish is visible in the color of their skin, that of the swordfish is visible in its eyes," he remarks from the pulpit of the boat. Perhaps, "thinking like the Marmara Sea," Koray's narrator states,

> [Osman] was watching the big eyes of the dying great swordfish with dismay. Its body was hardly moving . . . but those eyes! The eyes were rolling at times in the same, at times in the opposite direction. . . . The shiny top layer of its eyes would suddenly lose its stretch and crinkle, tighten, and crinkle again. Finally the spinning of one of its eyes stopped. The other one followed shortly after. (34–35)[1]

The emphasis on the eyes of the dying swordfish (*Xiphias gladius*), during a fishing season in the Marmara Sea when large stocks were being depleted, brings to my mind the classic narrative of the "green fire" in the eyes of the dying wolf in Aldo Leopold's "Thinking Like a Mountain."[2] In this celebrated essay, Leopold emphasized the harm to the mountain vegetation arising from the increase in deer populations with the removal of predator wolves, and gave expression to an enduring conservation philosophy. "Only the mountain has lived long enough to listen objectively to the howl of a wolf," Leopold stated. Is this emphasis, in Koray's novel, on the conspicuous death in the eyes of the swordfish—a top predator removed from many of the world's seas and oceans—an early warning about marine ecosystem devastation? Is it a reminder for future generations that only genuinely sustainable fishing promotes the resilience of the marine environments? Could it be that Koray, through this emphasis, extended the boundaries of moral obligation for the conservation of an ecosystem *in whole* in order to stop marine life abuse? No matter what the author's intention was, death in the eyes of the swordfish makes me think of the applicability of the land ethic model—largely considered as a land-based conservation model[3]—to the conservation of marine environments. Leopold famously stated that "the oldest task in human history [is] to live on a piece of land without spoiling it" and had formulated the idea of "land-as-a-whole" ("Conservation" 310).[4] He had also stated that "[s]oil health and water health are not two problems, but one," and that "the prevalent mutilations of soil and water systems . . . may have unpredictable repercussions" (84).[5] Leopoldian holistic conservation philosophy, then, that took its original impetus from the massive "exploitation" of the lands in the American Southwest,[6] provides a common basis for conservation and

covers the protection of aquatic and marine ecosystems across the globe.

In Yaman Koray's novel, *Deniz Ağacı*, drawn from real-life experiences, the devastation takes place in the Turkish Straits ecosystem—an environment that was kept unspoiled for millennia. These were the years when İstanbul—an imperial capital for 1,500 years—was facing massive migration from the rural areas, creating an ever-growing demand for marine resources, devastating fish stocks in the local waters. Small-scale fisheries with low ecological impact were being replaced by large-scale or commercial fisheries that brought an abrupt end to sustainability. The Marmara region's marine ecosystem was under stress as its food-web was undergoing changes, because top predators such as the swordfish were being removed in large numbers, along with many other kinds of commercial fish stocks. There was very little recognition that wildlife in the sea needed to have all their "cogs" and "wheels" intact. And yet, even as early as 1946, fishermen hunting with swordfish nets in the İstanbul Strait had complained that taking swordfish with harpoons during the spawning season in the Marmara was harmful for the stocks and would soon lead to depletion.[7] In this very same year, Leopold had written his important essay, "The Land-Health Concept and Conservation," and had listed the four conditions requisite for land-health, which is applicable in its entirety to marine conservation:

The biotic clock may continue ticking if we:

1. Cease throwing away its parts.
2. Handle it gently.
3. Recognize that its importance transcends economics.
4. Don't let too many people tinker with it. (220–21)

The notion of the expansion of the land ethic to the seas might, indeed, be explored within the "contingent nature of the land ethic,"[8] and its evolution into a new phase "in the minds of a thinking community" (Leopold, *Almanac* 263). Leopold's biographer Curt Meine, reminding us of the "openness" and "inclusiveness" of the land ethic, had once asked, "What forces will shape the land ethic in the future? How must the concept of a land ethic evolve in order to thrive and provide guidance to conservation in the twenty-first century?" (211). Then Meine had taken up this challenge, and rightly listed the expansion of the land ethic to the marine environments as one of the future projections (214). With the pervasiveness of environmental threats leading to new conservation models among ecological communities, the land ethic is still unrivalled as a rare, science-based, all-inclusive model that comprises not only the terrestrial environments, but also

the world's seas and oceans. Marine scientists' works that expand the boundaries of the "land ethic" to marine ecosystems testify to this: renowned marine biologist, Carl Safina, echoing Leopold's protest against abuses to the land, focuses on the devastations and the violent disruptions in the seas and oceans around the globe, stating the importance for a "sea ethic" that would help expand our sense of community to marine life, to counter the many threats.[9] Studies on particular marine ecosystems by marine biologists, showing declines through human impact, argue for the expansion of Leopold's model. Bohnsack, in his study of the Caribbean baseline, argues that Leopold's "biotic ethic" provides a framework for marine protected areas to restore past conditions; he bases his argument on the key ecological roles of a top predator species—Nassau grouper—in coral reef ecosystems and the ensuing disruptions following their removal.[10] Lubchenco, following her observations in the Kruger National Park in South Africa, argues that declines prompted the creation of national parks around the globe, and protests that the land ethic "has not yet been extended to the sea" (11). Lubchenco recommends an "ocean ethic" to help establish marine reserve networks, arguing that protection in the oceans is a must today, following the need to protect wildlife and habitats on land. To frame it all, the Leopoldian model takes the upper hand, in order to probe deep into the history of marine environments for conservation; the magnitude of alterations in the marine environment becomes visible, as in the terrestrial environment, within an evolutionary and ecological framework. If it were not for his untimely death, Leopold would have expanded his evolutionary, ecological insight to the marine environments—one only needs to remember that Leopold's thought "reflected the social realities of his time and place" (Meine 211). Within a decade of his passing, devastation in these environments became conspicuous. There are striking data in a 1996 report by the United Nations Food and Agriculture Organization: "Forty years ago, only 5% of major marine fisheries were categorized as 'fully exploited, over exploited, or depleted;' today nearly 70% of the global fisheries are in these categories. From 5% to 70% in forty years!" (Lubchenco 13). Therefore, it becomes a global obligation to introduce the Leopoldian model forcefully to the seas and oceans, to help marine communities gain back their "capacity for self-renewal." Echoing Leopold, I will call this capacity "sea-health."[11]

Keeping in mind that marine and terrestrial ecologies developed as distinct intellectual fields, it might be wondered if a unified conservation ethic comprising both the marine and the terrestrial—i.e. the entire earth—could be framed. But hadn't Leopold, in "The Round

River," noted that the word "land" actually stood for the "earth" when he wrote, "Conservation is a state of harmony between men and land. By land is meant all of the things on, over, or in the earth" (*Almanac* 189). In any case, such an integral approach to conservation exists in an ancient and forgotten Turkish creation myth that concerns a category of the spirit that dissolves the terrestrial/marine distinction: the "Yer-Su" (land–water) spirits that Kara Han created—an entity that is one. "Yer-Su" spirits are associated with nature spirits connected to Ötüken, the Mother Earth. At times, "Yer-Su" spirits could be the spirit of trees, rocks, mountains, lakes, rivers, or even of the entire country; it is imperative that communities pay due respect to the entire earth [not just the terrestrial or the marine], for "nature's bounty will diminish if certain rules are not observed," indicative of the punishment for being disrespectful (Miskiniene 136).[12] Echoing the ancient "Yer-Su" ethics, the model of an expansive land ethic comprising the terrestrial, the aquatic, and marine environments, could be redemptive for numerous coastal communities around the globe, and certainly, for peoples living in a country like Turkey, surrounded by seas on all three sides, and harboring an inland sea. From Homer to Herodotus, to present-day Turkish sea literature, these seas teeming with life have been a potent force, impacting terrestrial environments; what is overlooked, however, is how lifestyles and choices in the terrestrial sphere have impacted marine environments. Turkish narratives on the lives of coastal communities who "earn their bread from the sea" reveal a commercial outlook on marine life, oblivious to the wealth in this realm, just as the case is in the land. After all, as Meine once pointed out, "we are terrestrial creatures with terrestrial biases" (214); the degree of being ethical to the seas will ultimately be an indicator of how much we can be ethical in dealing with the terrestrial environments. As Leopold's hydrologist son Luna once stated, "The health of our waters is the principal measure of how we live on the land" (qtd. in Meine 214). As Leopold was expanding the land ethic in the bulk of his writing to include watersheds such as the Coon Valley watershed, and rivers such as the Mississippi, the Rio Gavilan, the Rio Grande, and the Blue River, he was exploring how the terrestrial and the aquatic environments intersect and impact one another—how life choices in the land impact the rivers. The Blue River, for instance, was subject to flooding because the soil had been eroded through decades of overgrazing; "the settlement along the Blue River had failed" (Newton 59). This very fact that sea and land are interdependent makes it folly to think that the seas exist "to drip milk and honey into Abraham's mouth" (Leopold, *Almanac* 240),[13] and, therefore an expansive land ethic is a priceless

model for the world, which cannot leave out the watery two-thirds of our planet.

> —We abuse *the sea* because we regard it as a commodity belonging to us[14]

> "Now, every fisherman you meet is upset. They dried up the seas. . . . There were so many fish that if you dropped a needle, it wouldn't hit the bottom. . . . İstanbul used to have massive fish raids. Mackarel, bluefish, bonito, toric raids. . . . Anyone who threw the net pulled back a reward. Row boats, fishing boats, and motor boats would pile mountains of fish under bridges, fishmarkets, sidewalks. The city would get drunk and frenzy over the amount of fish." (Kemal, *Denizler* 141)

The lines above from Yaşar Kemal's nonfictional work *Denizler Kurudu* [The Seas Dried Up] (1972), where Kemal introduces the term, "golden age for fish" (140) to describe the abundance of fish, takes up the events of the 1950s—when the Marmara was still resilient, and industrial fishing had just begun to exert its influence. Kemal's elegiac lament, "denizler kurudu," indicative of alarming decline in fish species, only partly true for 40 years ago, has become a fact for our times. Scientific essays on the depletion of fish stocks today reveal striking figures; they show that only 20 years ago, the Marmara had blue tuna, as well as swordfish and turbot, all of which are thoroughly depleted today. "Now we face serious decline in the fisheries in the İstanbul Strait," says marine biologist, Bayram Öztürk—the author of *Deniz Yazıları* [Sea Essays]—also pointing out depletion of high value species (76).[15] He argues that over the years, overfishing and ecological changes led to the depletion of fish stocks. Another striking conclusion is reached by Artüz, a hydrobiologist: "Until 1975, the number of fish species that had an important role in the Marmara marine resources industry was one hundred and twenty seven; now this number has gone down to four or five."[16] With these shocking figures, it is not only the environmentalists who lament the decline of fish stocks and fisheries; alarm is being expressed nationwide—particularly for the species that are thoroughly depleted: blue tuna, swordfish, mackerel, turbot, and sturgeon.[17]

Today, such wide-scale disruption in the Marmara Sea resembles Leopold's portrayal of disruptions in the land. Leopold had observed the impact of the removal of top predators on the vegetation, and the effect of massive commercial hunting on the populations of wild

game. He resolved that land health depended on the health of all its components—including its predators. Koray's *Deniz Ağacı*, with the Marmara ecosystem as its setting where life choices made on land have serious repercussions on water, reveals the key factors that led to today's depletion records. Unsustainable fisheries, overharvesting of commercial fish stocks, and the removal of swordfish (top predators of the Marmara ecosystem) all point at the need for an expansive land ethic model; this would ultimately mean the creation of a network of marine reserves in the Marmara, and full protection of nursery habitats from all disturbances.

Written exactly half a century ago, *Deniz Ağacı* is the account of a swordfish season, from early April to the end of May, when the Marmara Sea was still resilient and the home for sea-fan coral[18]—Koray's choice for the title of the novel. As narrated in the novel, large sea-fans in the Marmara, once uprooted and taken ashore, emit a bright light for two days and nights—"bright enough to enable one to read the daily newspaper beneath it" (43)—symbolizing how in the terrestrial we are dependent on the marine. Sea-fans, once taken ashore, dry up fast and crumble, signifying "the fragility and frailty of the lives of the fishermen and the sea" (Batur 145). In this context, the all-pervading image of the sea-fan points to the approaching danger for Marmara's fish stocks, for these are the years that mark the beginning of overfishing in these waters to meet the rising demands of İstanbul's ever-expanding urban population.[19]

The setting in *Deniz Ağacı* is the entire Marmara Sea with its islands and seascapes. In the islands of Hayırsız, Fener, Ekinlik, Marmara, and the Kapıdağ peninsula, livelihood depends on fish stocks—specifically the predatory swordfish. Swordfish are large, valuable, and belligerent. Ahmet, the protagonist, is the wise and adept harpooner, the idol of the fishing village. At the age of nine, he had lost his father and brother when their fishing boat sank. He and his mother live hand to mouth on whatever the sea has to offer, Ahmet harpooning for swordfish in *Kaderim*—Osman's two-man boat. Each page is filled with the sound of the Marmara waters, harpooners taking large numbers of swordfish, even juvenile ones ("That was a magnificient swordfish day. The least number mounted to each boat was four or five swordfish" [495]). The struggles for survival in the local fishing villages, as narrated in the novel, mirror real-life conditions along the settlements in the Turkish Straits ecosystem. Many "breadwinner" fishermen are unaware of the dangers of overfishing, let alone of the possible devastation of the entire marine ecosystem. More importantly, they lack the knowledge that devastation in the waters would ultimately mean self-destruction. Thus, Koray

forcefully underlines an ethical relationship with the seas, giving special emphasis to the need for a fisheries code of conduct; ultimately, he wants the local people to rethink their relationship with the marine ecosystem for the sake of the integrity, stability, and beauty of its biotic community. Whereas the abundance of fish in the past formed the basis of the rich vein of sea literature in the Turkish literary heritage, devastation in these waters with the advent of large fishing industries is a new focus for Koray. The termination of small-scale fishing due to severe economic pressure, the advent of commercial overfishing with more powerful boats, and the ensuing ecosystem devastation that surface in this work throw new light on today's diminished fish stocks. At the present time, when there is total depletion in certain fish species as well as a serious decline in the populations of many others, the insights provided by *Deniz Ağacı* on fisheries and on the lives of fishermen are more relevant now than in the past, for the work leads toward a fishery ethic—one that would forever guard the resilience and diversity of the local waters.

> —There is as yet no ethic dealing with man's relation to *the sea* and to the *marine life* and plants which grow in it.[20]

An exploration of Leopold's "land ethic" model in sea literature is not a novel idea; Callicott and Back, for instance, compare Rachel Carson's *Under the Sea Wind* with Leopold's "land ethic."[21] Such studies make us wonder whether marine and terrestrial ecosystems are similar in certain ways—especially when appropriate comparisons are made. However, exploring the relevance and applicability of the key characteristics of Leopold's land ethic in maritime literature, emerging from a geography where marine and terrestrial distinction is blurred, turns the land ethic into a single ethic that would call attention to our deep responsibility for protecting the entire earth.

Let us then explore Koray's expanded land ethic—or lack of it in the community conscience—in *Deniz Ağacı*. Perhaps a few questions might help to draw Koray nearer to Leopold: Can Marmara residents expand their vision to include marine life in their sense of community? Such a community concept would urge responsible behavior toward the sea and its creatures. Are the natives aware that they are connected to the sea around them through the seafood they eat and the other marine resources they use? As Leopold noted, to not be aware of this linkage poses a "spiritual danger." Do the Marmara people know how the marine environment has changed within their lifetime? Do they know what events led to loss of marine biodiversity? Do they know that the sea around them is what it is because of

their past decisions? If they did, would they now be willing to make pro-marine life choices? Knowing the impact of our past decisions is a first step toward a sustainable marine ecosystem. Are they aware that human health is connected to sea health, and that the health of the seas, and in turn human health, is determined by our values? Such awareness would be a key factor in developing an expanded land ethic to include the seas. Do they know that for replenishing diminished sea-life, collective action of coastal communities is necessary? Such collective action would reconnect us to the sea creatures. Do they know that a land ethic that embraces the sea can never really be written, that it must evolve over time "in the minds of a thinking community" (Leopold, *Almanac* 263)?[22] This profound knowledge will help the emergence of an expanded land ethic that will also reflect our own cultural values about the sea. Do they understand that their unique marine ecosystem evolved over vast expanse of geological time? Are they ready to read the seascapes from the perspective of the sea? Finally, do they know the need to *Think Like the Marmara Sea?*

Thinking Like the Marmara Sea

In this unique ecosystem that is the setting of *Deniz Ağacı*, a life-support system came about through processes occurring in geological time, producing rich fish fauna, ensuring food security in the long term and contributing to the overall quality of life. Owing to rich marine life, past settlements mostly occurred on the coastal areas, and fish was seen as an unlimited and inexhaustible resource. With the advent of massive migration to İstanbul and environs (particularly from the 1950s onwards), driven by poverty that created a demand for natural fish stocks, biodiversity in these waters began to decline; each marine species with commercial value was heavily fished (not only by traditional but by harmful techniques, such as trawling, and the use of radar, dynamite, and high-voltage lights), leading to a serious decline in natural fish stocks. A close look at the environmental history of these waters, then, confirms Koray's *Marmara Elegy.*

> —The life of every *sea* sings its own song, but in most the song is long since marred by the discords of misuse.[23]

What was the driving factor behind the once grand life-support system in the Marmara—once a rare marine sanctuary? Perhaps a few words on the unusual meeting of waters in this marine environment, from two different currents, might highlight the area's complexity. "A massive ocean passes through the city of İstanbul," states

Bayram Öztürk, a renowned professor of marine science, who goes on to explain:

> I say ocean because, the salty waters found 50 meters below the surface of the İstanbul Strait and the Marmara Sea are from the Atlantic Ocean, which journeys through Gibraltar, the Mediterranean, and finally makes its way to the Black Sea through the İstanbul Strait. Surface waters of the İstanbul Strait are much less salty. It comes from the Black Sea and ends up in the Mediterranean. Every second, the waters from the Atlantic and the Black Sea flow through this city and salute the townsmen. (*Deniz Yazıları* 72)

The intriguing meeting of the waters over great distances, through the ages, dates back to geological time. As the environmental history reveals, once, some 50,000 years ago, the Black Sea was a vast fresh water lake (so was the Marmara). The Danube, the Dnepr, the Dnestr, the Don, and other major rivers flowed into this lake. At the beginning of the fourth geological period, major landslides occurred in the Marmara and the Aegean regions. İstanbul and Çanakkale Straits came into being as a result of these landslides. Then, the waters of the Mediterranean and the Black Sea began to meet through two different currents—the surface current from the Black Sea and the counter current below the surface from the Mediterranean.[24] This constant flow of water in opposite directions,[25] resulting from barostrophic pressure, and also salinity and temperature differences of the Black Sea and the Mediterranean, created a rich fish fauna in these waters, endowing the Marmara with a special significance in this unique ecosystem. Over eons of time, it grew into a vast fish-breeding farm. According to Cemal Saydam, another acclaimed professor of marine science:

> Marmara is a magnificient sea, for the ones who know its structure. The first 25 meters or so is from the Black Sea, and below that, 1200 meters at its deepest, is from the Mediterranean. Like olive oil and water these two waters do not mix. The first 22 meters are mildly salty, and in the few meters that follow there is a jump from 2.2% to 3.8% in salt content. Forget fish, oxygen can't penetrate this barrier . . . Fish life in the Marmara is limited to the top 25 meters, there isn't enough oxygen to support an economic fish habitat past that depth. (Personal communication)[26]

Saydam also draws attention to the once rich fish fauna in these waters resulting from nutrient enriched waters—the powerful inflow of nutrients brought by rivers.[27] As regards the unprecedented fish fauna, one only needs to remember the fact that until recently the migratory blue tuna—now totally depleted in the Marmara—routinely arrived from the Atlantic Ocean over thousands of years to reproduce in the waters of the Marmara. No wonder, Evliya Çelebi,[28] the author of the 10-volume *Seyahatname* (Book of Travels), in Book 1 (İstanbul [1630]), stated, "I cannot describe the variety here; there are an hundred thousand kinds of fish" (254).[29]

This unique condition in the Straits that urged the evolution of both migratory and nonmigratory behavior in fish species over thousands of years also led to a complex migration pattern between these seas. As Ali Pasiner—author of several books on fish fauna and fisheries in Turkey explains, "fish in the Turkish waters developed a *habit* to migrate twice a year between these waters. As the waters of the Black Sea get cold in the fall, many fish species start migrating to the Marmara, as far as the Mediterranean. And the return back to the Black Sea takes place in the spring when the Black Sea gets warmer." Pasiner adds,

> When İstanbul and Çanakkale Straits opened up, and the water flow as we know it began, many fish species from the Mediterranean migrated to the Marmara and the Black Sea. Following this migration, most of these species settled in this less salty, plankton-abundant and diverse Black Sea. But at the beginning of the cold season, they have made it their *habit* to go back to the Marmara and the Mediterrenean only to return back again when the waters warm up in the spring. (*İki Boğazın Suları* 14)[30]
>
> —He assumes that for him *the sea* will sing forever.[31]

Needless to say, the fish migrations resulting from such unusual conditions turned the Turkish Straits ecosystem into a paradise for small-scale fishermen for hundreds of years.[32] The fish migrations between the Seas, in the fall and in the spring, provided fishermen along the İstanbul Strait, the Marmara, and the Çanakkale Strait[33] with unequaled fishing opportunities. Some historical sources and documents on İstanbul reveal the abundance of fish catch in these waters: Fish were so abundant that they could be caught by hand. Many boats could be filled with the fish caught from one net. Children and women would catch fish by lowering baskets from their windows!—

We come across these descriptions in the book, *İstanbul Boğazı* (*De Bosporo Thracio*), written by Pierre Gilles, the sixteenth-century French naturalist. What makes Gilles's *İstanbul Boğazı* particularly significant is the environmental history of the area dating back to these times. Gilles states:

> Marseille, Toronto and Venice are special in terms of their fish abundance but the Bosphorus is superior from them all. As a gate for the fish, they travel through the Bosphorus between the two seas back and forth in fall and spring. Laws of nature are so strict that cranes fly past here to the Mediterranean twice a year and fish is so abundant that they can be caught in large numbers solely by chance. One doesn't need to have a fishing training: even someone who lacks the talent . . . could catch fish. . . . I can't list the countless kinds of fish; in here, they catch many kinds in quantities that fill several ships with one throw of a net. (19)

Such was the wealth of the seas, then. As far back as the seventeenth century, fishing by net was popular; trawling was done all along the coastal waters of the Marmara, the islands, and the Straits. Historical accounts list a wide variety of fish in great abundance—bonito, grey mullet, bluefish, shellfish, oysters, mussels, clams, crabs, to name just a few. An elaborate account of fish and fisheries can be found in the first book of Evliya Çelebi's *Seyahatname*.[34] It is important to note that Evliya Çelebi mentions the presence of 300 weirs (fish traps) along only the İstanbul Strait, which is a strong indication that the area was heavily fished, with special emphasis to the swordfish. "The largest weir is located at the Beykoz port. This is a weir to hunt the swordfish in three different locations," says Evliya Çelebi who goes on to explain that "[i]n these weirs, depending on the season, fishermen catch mackerel, bonito, alagöz, fıçıd, grey mullet, paçoz, palarya, istarid, oyster, kolyaz, atrina, anchovy, striped red mullet, çuçurya, uskurbut, gelincik, kaya, çiroz, gümüş, hureyşe, tirekiş, bluefish, and *an hundred thousand* other kinds and thus earn their bread" (*Seyahatname*, Book 1 [İstanbul] 254).[35]

The wide variety of fish in these waters kept intriguing travelers exploring the Ottoman lands; 200 years after Evliya Çelebi, the author of the eight-volume *Asie Mineure,* Pierre de Tchihatchef (the nineteenth century Russian naturalist and geologist), was equally impressed by the rich fish fauna. In *Le Bosphore et Constantinople,*[36] published in 1864 (on İstanbul and its environs, including the islands), de Tchihatchef particularly draws attention to the variety of

fish, paying special attention to the abundance of bonito, indicating its nutritional value (101). In regard to fish abundance in the Black Sea, in the Straits, and the Marmara, he mentions numerous fish species such as mackerel, swordfish, sole, red mullet, sturgeon, just to name a few—some of which are depleted today. Karekin Deveciyan, the director of the fishery of İstanbul—a Turkish-Armenian zoologist—wrote *Türkiye'de Balık ve Balıkçılık* [Fish and Fisheries in Turkey] (1915), perhaps the first scientific study on fish and fisheries in Turkey. With individual descriptions of astonishing number of fish species of the Turkish coastal waters, the book gives us insights into fish biodiversity in the İstanbul Strait and Marmara's Princes Islands about 100 years ago (the naturalist, Plinius "was not exaggerating when he mentioned the presence of blue tuna as large as 337.5 kilos" [46–47]).[37] Deveciyan provides fascinating information on the fish fauna and abundance, coupled with detailed accounts of the migration patterns of diverse fish species between the Black Sea and the Mediterranean, indicating the fishermen's terms for these movements—*anavasya* (ascent) and *katavasya* (descent).[38] As Deveciyan indicates, the breeding ground for the migratory fish was the Marmara, and yet a very special breeding area in the Marmara Sea was the Gulf of İzmit in the East. Seabass, common sea bream, white sea bream, red mullet, stripped red mullet, grey gurnard, sole, and brill were natives of the Gulf of İzmit. Kingfish, mackarel, plain bonito, big bonito, and bluefish, just to name a few, came here to reproduce. A crucial area for the health of the entire ecosystem, the Gulf created such richness during seasonal migrations that a work dating back to early 1950s revealed, "The Bosphorus alone claims more than sixty kinds of edible fish, some of them unknown elsewhere. This is understandable, for the meeting of waters is so unusual as to encourage strange growth" (qtd. in Mardin 43).

Literary Reflections on the Removal of Top Marine Predators

This abundance and richness in the Marmara ecosystem effaced any distinction between the terrestrial and the marine, and in the coastal communities a pattern of interdependence of land and sea came into being. Perhaps the most wonderful image of this interdependence in *Deniz Ağacı* reveals itself in the thousands of bloaters hanging in rows, left to dry, in alleyways from every side, in the month of May: "People would get so accustomed to the glistening silver fish hanging all around, even the swallows lined up on telegraph and power lines seemed like bloaters on first sight," explains the narrator (374). But in the following years, it was not the local

fisheries that caused declines in the ecosystem. Population explosion in İstanbul and environs had increased demand on swordfish stocks along with other commercial fish stocks.[39] The swordfish catches in *Deniz Ağacı* are so massive that an average reader, thinking like the Marmara Sea, would be bound to realize that this would bring immense harm to the health of the ecosystem. Echoing Leopold's model of the land ethic, then, devastation in these waters began with the removal of top predators. It is this very removal of top predators (and its devastating impact) in the Marmara Sea that both Koray's *Deniz Ağacı* and Kemal's *Denizler Kurudu*[40] convey to us today (Fig. 1).

As narrated in *Denizler Kurudu*, one of the assaults on marine ecological integrity is the massive dolphin harvest in the Marmara dating back to the 1950s.[41] Kemal's fishermen reveal that dolphins, in their collective behavior,[42] were the guardians of the marine ecosystem. Basically, they were protecting fish biodiversity. Dolphins, "the street children of the İstanbul Strait"[43] as marine biologists call them today, were hunted for oil to be used in the industries.[44] As Kemal makes clear, the opening of the İstanbul Strait to the Marmara was an excellent location for thousands of dolphins to feed on migratory fish schools, and they were acting collectively in herding fish schools to breakwaters, weirs, and fish traps. This, in turn, created an abundance of catch for the fishermen. A center of focus in Kemal's later novel, *Deniz Küstü* [*The Sea-Crossed Fisherman*] (1978),[45] the hunting of dolphin in *Denizler Kurudu* indicates strongly that once there was sustainability in these waters, but that was before the advent of large-

Fig. 1 Map of the Sea of Marmara, prepared and edited by Cemal Saydam, Hacettepe University (NASA/GSFC, Rapid Response).

scale catches for their oil, and before the advent of exploitative fishing practices by ecologically ignorant Marmara fishermen. One fisherman in *Denizler Kurudu* laments the loss of stability in the waters:

> The dolphins used to block the way of the fish coming from the Black Sea. The fish coming down from the İstanbul Strait and heading towards the Aegean Sea were stopped by the dolphins and these fish used to be dispersed to the shores all along the Marmara. However, when the dolphins were slaughtered, there was nothing to stop the fish coming from the Black Sea. (169–70)

Thus, Kemal gives an important piece of information related to sustainability shown by collective dolphin behavior; they were useful in herding fish schools into coastal areas and into the fishermen's nets.[46] As the narrative goes, tens of thousands of predator dolphins were blocking the migration corridor in the opening to the Marmara Sea, so that the fish schools coming down the İstanbul Strait were getting dispersed to the Marmara shores, rather than exiting from these waters through the Çanakkale Strait. And this collective dolphin behavior, in turn, was beneficial to the traditional fishermen in these waters, as well as ensuring the health of the Marmara—a "breeding farm" itself:

> All the different species of fish in the Black Sea flow into the Marmara to lay their eggs. They take refuge in the Marmara. Once you destroy the stability in the Marmara, the stability in the Black Sea and also in the Aegean Sea will be devastated. The world is like our bodies. Once you destroy one of the seas, the rest of the seas will be affected. Once you destroy a part of the land, the rest of the lands will be destroyed. (*Denizler Kurudu* 193)

As one fisherman explains, "[i]n the presence of dolphins, other predator fish could not enter the Marmara. Dolphins ate the fish, scared them and diverted them from the deep seas to the shallow waters along the coasts of the Marmara, and also protected them from the other predators" (*Denizler Kurudu* 163). Yet, following dolphin hunts, one paralyzed fisherman chronicles the consequences of interfering with nature's ways: "In the absence of dolphins, there is no kolios, no bream, no orfos. No lobster, no mackerel, no mullet. In the absence of

dolphins, there is no sea bream, no bluefish, no gray mullet, no bass" (*Denizler Kurudu* 164).

> —Only *the Marmara* has lived long enough to listen objectively to the *sound of a swordfish.*[47]

Daily endeavors of Koray's harpooners in *Deniz Ağacı* reveal the causes and consequences of the removal of the swordfish stocks—the top predators—from the Marmara waters: severe financial pressures loom large in all fishermen's discussions. As Batur points out in "The Sea Connects It All," local fishermen in the novel "are burdened by the commercial fishermen coming to their seas with more equipment, and more powerful boats" (145). The description, "the sea was full of sword fishing motor boats of all sizes, numerous boats as far as the eye could see, with a harpooner's pulpit leaning out" (7), about the first day of the new swordfish season, is a clear picture of the plight of the fishermen pursuing their livelihood in these waters. In the structural complexity of the narrative, the harpooners compete with one another in the race to take more swordfish each day, unaware of the devastation they are inflicting on marine life. The "villains" of *Deniz Ağacı* are the "big fishing companies" ready to purchase and transfer to İstanbul whatever the local and nonlocal fishermen have taken: they are "exploiters, hateful to nature and to people" (Batur 144). The harpooned swordfish piled up in boats are transferred to the commercial "İstanbul Motor" which will quickly reach the market of a sprawling city. It is important to note that demand for the Marmara swordfish does not only come from İstanbul's soaring population. The narrator reveals:

> The sea-scapes where Marmara's swordfish are caught happens to be on the route of ships traveling between the two Straits. Huge tankers and gigantic cargo ships sail past swordfish boats. Some of the tankers made it a habit to block the way of the fishing boats, and express interest in buying newly harpooned swordfish in return for goods such as paint, wooden boards, equipments, and such. (*Deniz Ağacı* 50)

Koray portrays the ills of massive swordfish catch at a rate faster than they can reproduce: "The last three day's swordfish harvest was so plentiful that thinking it might not bring money, some fishermen preferred to keep them in cold storage, rather than transferring them to İstanbul," remarks Koray's narrator (300); the local fishermen are bound to either transfer the day's harvest to the İstanbul Motor, or to store them so that they can make substantial off-season profits. Apart

from the overfishing of this particular species that confirms Kemal's words on the swordfish catch in *Denizler Kurudu*,[48] one also reads about the harvest of other fish—"tons of fish"—with high-voltage lights in *Deniz Ağacı* (95–97), another disruption Kemal mentions in *Denizler Kurudu*. Thus, the novel illuminates the reckless path that led to today's total depletion in the migratory swordfish stocks in the commercial wars of 1960 and beyond.

In the midst of massive swordfish expeditions, Koray's protagonist, Ahmet, is the example of humane fishing, as he takes his swordfish through traditional harpooning in his two-man boat. Nevertheless, Ahmet, too, is subject to the pressure of making money: for his upcoming wedding, he harpoons many swordfish, and transfers all of his harvest to İstanbul in hope of more profits. In the midst of such turmoil and daily struggles, Koray has a message of fishing ethically.[49] As Ahmet takes the swordfish with a harpoon, "[i]t is an act that makes the fisherman and the fish equal as opponents, since both are armed with piercing weapons" (Batur 143). Ahmet's traditional two-man boat, set against the powerful motorboats with advanced fishing equipment, is depicted as not harming the resilience of the Marmara. Thus Koray, in the person of Ahmet, and his sustainable fishing, takes his narrative in the direction of ethics: Ahmet emerges as one who endeavors to work within an ethics of correct fishing.[50]

Today swordfish—hunted in great numbers until the 1970s—has completely disappeared from the Marmara. Records dating back to the 1950s reveal 217.5 tons of harvest annually.[51] Other fishery records reveal an earlier abundance of swordfish in these waters; in Deveciyan's accounts on "Swordfish," the catch number is 6,000 annually almost a century ago in the İstanbul Strait (40–44). Öztürk states that "today very few 'İstanbullu' will remember swordfish fisheries of the past, at Beykoz. And yet, there are accounts of the halting of sea traffic in the İstanbul Strait during the swordfish migration in Ottoman times" ("Kofana Gitti" 402). Not only swordfish, but many other species, such as dentex, mackerel, chub mackerel, pilchard, pargus, toric, sea bass, bonito, grey mullet, red mullet, striped red mullet, large bluefish, and stingray are mentioned in *Deniz Ağacı*, which thus becomes an important source for documenting the biodiversity in the as yet unspoiled waters of the Marmara as far back as the 1960; the resilience in the waters is reflected in the line, "after bonitos, torics raided the [İstanbul] Strait; fish almost washed a shore" (100). It was this diversity and abundance of fish that made it possible for swordfish to dwell in these waters and increase their survival rate in the plankton-rich habitats. Nevertheless, fishermen who

could not foresee what might happen destroyed the wealth of one of the richest waters that ever existed. Yaşar Kemal laments a decade later, "[A]h, they dried up the seas" (*Denizler Kurudu* 133).

> —But we must act vigorously and quickly, before the remaining bits of *marine* wilderness have disappeared.[52]

As I stand at the edge of the Marmara Sea this summer, thinking about the past rhythm of its life, I ask myself whether this vast body of water can turn into a marine sanctuary again. The legendary sea-health that existed in these waters for millennia has been on the decline resulting from rampant overfishing, urbanization, pollution, as well as global warming.[53] I remember a few optimistic lines from Kemal's *Denizler Kurudu*: "Won't the sea ever come back to life again?" asks one fisherman. "The sea is endowed with seven lives . . . it dies, and comes back to life again . . . but we need to help her out in her attempts to return to life," replies another (146). Isn't literature the best hope for a change of heart and mind, and personal conversion? How is this particular ecosystem with a marked decline in species diversity, then, ever going to replenish itself? Only through an expanded "land ethic," as mirrored in Turkish maritime literature, I repeat to myself, with admiration for Aldo Leopold's pioneer spirit.

Steeped in historical awareness, Leopold articulated the need for conservation of the wild so forcefully that his achievements became a guiding light for protection worldwide. Marine biologist Lubchenco drew attention to the vanishing marine wildernesses around the globe and stated, "What lessons have we learned from terrestrial parks and their history that might inform our thinking about ocean protection?" (11). She showed how the wanton killing of animals sparked the creation of protected areas in every continent. It is time now for the creation of marine reserves worlwide, for today 75% of the major marine fish stocks of the world's seas and oceans have been depleted. And as the Turkish example proves, a vast number of the fish species that industrial fisheries seek are migratory, using the seas and oceans around the globe.[54]

My fervent hope is that the lessons we have learned from Leopold can now inform our thinking about the protection of the Marmara. This is essentially letting self-renewal and healing to take place in these waters. Ecological degradation could be checked by creating a network of no-take marine reserves and nursery habitats that will bring back the old breeding grounds, as has been demonstrated already in many special marine areas around the globe.

All this said, let me slightly modify Leopold's prophetic words in his essay, "The River of the Mother of God," to speak for the spiritual

and physical welfare of future generations.[55] I believe it is time to "draw a line around" each special marine environment, and declare:

> This is *marine* wilderness, and *marine* wilderness it shall remain.

Notes

1. All translations into English in this essay are my own. Lines quoted from renowned Turkish poet, Bedri Rahmi Eyüboğlu's poem "İstanbul Destanı" [İstanbul Saga] have been translated into English by Clifford Endres and Selhan Endres (Kadir Has University, İstanbul).

2. Leopold, in the groundbreaking essay "Thinking Like a Mountain," after killing a wolf in order to help control deer populations, states, "We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes—something known only to her and to the mountain" (138). After this revelatory experience, Leopold's life-long studies were focused on to "think like a mountain."

3. J. Baird Callicott in "The Land Aesthetic" stated that Leopold's essay [The Land Ethic] "is the first self-conscious, sustained, and systematic attempt in modern Western literature to develop an ethical theory which would include the whole of terrestrial nature and terrestrial nature *as a whole* within the purview of morals" (157).

4. For a discussion on the "holistic dimension of the land ethic," see Callicott's "The Holism of the Land Ethic and its Antecedents" in *Beyond the Land Ethic* 67–70.

5. See Johnson's "Travelling in the Right Direction" (84), where Johnson quotes from Leopold's essay, "Lakes in Relation to Terrestrial Life Patterns" (1941).

6. For the "exploitation" of natural resources in the Southwest on which Leopold grounded his conservation philosophy, see "Some Fundamentals of Conservation in the Southwest" (1923), 86–97.

7. In the year 1946, harpooners in the Marmara Sea, on the other hand, had claimed that swordfish appeared in the surface of the water not for spawning, but for the need to warm up in the sun (Alıçlı 321). In this article on the history of swordfish in the Marmara Sea, Alıçlı reveals that swordfish hunt was most intense in the 1960s; sworfish between 1970 and 1971 is described as "existing specie," whereas between 1972 and 1976, it is described as "specie that is getting depleted" (324). Also see Türkmen's article (1953) which reveals the striking figures for the abundance of swordfish, sold in the İstanbul fishhouse, between the years 1928 and 1952 (333,325 kg, in total, in 1952).

8. See Meine, *Correction Lines* 210.

9. See Safina, "Epilogue" *Song for the Blue Ocean* 435–40.

10. See Bohnsack, "Shifting Baselines, Marine Reserves, and Leopold's Biotic Ethic" 1–7.

11. I am borrowing these words from Leopold's important essay, "The Land-Health Concept and Conservation," where he states, "our new physical and chemical tools are so powerful and so widely used that they threaten to disrupt the capacity for self-renewal in the biota. This capacity I will call land-health" (219).

12. Miskiniene explains, "In Ancient Turkish Mythology, Yer-Su spirits, at times, play a key role. As narrated in the Göç Destanı [Migration Saga], Turks give away [as a gift], a rock that has been regarded as holy for the past forty generations. Following this, the skies instantly get unnatural, birds and other animals in the wild get silent. Vegetation dries up, and Turks are afflicted by epidemic desease. The voices of Yer-Su spirits are heard telling Turks to 'migrate.' These voices cease only after Turks have migrated for months, and arrived in distant lands. Thus 'Yer-Su' spirits are said to have punished Turks for their sacrilegious act" (136).

13. I am using Leopold's expression to emphasize devastation in the *sea* (italics mine). In "Foreword to Sand County Almanac," Leopold states, "[c]onservation is getting nowhere because it is incompatible with our Abrahamic concept of land. We abuse land because we regard it as a commodity belonging to us" (xviii).

14. Statement adapted from *A Sand County Almanac* xviii. Italics mine.

15. For striking figures on depleted stocks, see Öztürk, *Deniz Yazıları* [Sea Essays] 75–78. Also see Asaf Ertan, "Balık Bolluğundan Tükenişe Giderken Geçmişe Özlem" [Nostalgia for the Past: from Fish Abundance to Depletion] 396–400.

16. See Levent Artüz, "Marmara ve Boğazların Ekolojisi ve Değişimler" [The Ecology of the Marmara and the Straits, and Transformations]. B.Ü. Deniz Teknolojisi Sempozyumu. Web.

17. See Özturk, "Kofana Gitti" [Large Blue Fish Is Gone] 402.

18. See Pınar Batur's "The Sea Connects It All" where she states that the sea-fans were "once abundant in the Marmara Sea before the days of overfishing with dynamite and combing, inappropriate usage of netting, and increasing pollution from factories, settlements, dirty water discharge and the daily trash, all of which ends up in the sea" (144). Batur has recently been elected among the 100 best professors connecting science to public policy by SENCER Institute.

19. See Batur for a revealing analysis of "increasing consumption demand from urban areas" (140).

20. Statement adapted from "The Land Ethic" in *A Sand County Almanac* 238. Italics mine.

21. See Callicott and Back, "The Conceptual Foundations of Rachel Carson's Sea Ethic" 94–117.

22. I am referring to Leopold's words in "The Land Ethic" (in *A Sand County Almanac*), where he stated, "[o]nly the most superficial student of history supposes that Moses 'wrote' the Decalogue; it evolved in the minds of a thinking community" (263).

23. Statement adapted from "Song of the Gavilan" in *A Sand County Almanac* 158–59. Italics mine.

24. An important aspect of the Black Sea is an unusually high river discharge it receives from large rivers, that is, it is an inland sea of relatively low salt content. Fresh water from these rivers raises the level of the Black Sea about 40 centimeters. The İstanbul Strait is the only outlet of the Black Sea. Therefore, along the İstanbul Strait, the lighter fresh water from the Black Sea floats on the surface of the heavier salt water at the depths, flowing in from the Mediterranean.

25. For information on the two opposite currents in the Çanakkale Strait, see Pasiner, *Alabalıktan Zarganaya* 84–85.

26. Saydam states that the Marmara has always had breathing problems, and that the flow of excess waters from the Black Sea is its saviour; the top 25 meters of the Marmara, from the Black Sea, is renewed every three months, whereas the waters below, from the Mediterranean, are renewed every seven years. (Personal communication with Cemal Saydam, Hacettepe University, Department of Environmental Engineering, Ankara, May 26, 2011).

27. Many rivers falling into the Black Sea bring in mineral nutrients necessary for the growth of marine plants; nutrients guarantee the fast growth of marine vegetation along the shores of the Black Sea. See map on nutrients in the seas (Saydam 98).

28. Evliya Çelebi is the most acknowledged Ottoman traveler who journeyed through the territory of the Ottoman Empire and neighboring lands over a period of 40 years in the seventeenth century. In the course of his travels, he compiled his experiences in a book of 10 volumes, titled *Seyahatname* [Book of Travels]. The UNESCO has recognized Evliya Çelebi as "Man of the Year" in 2011, to commemorate his 400th birthday.

29. Evliya Çelebi is notorious for his exaggerations, but his description, "an hundred thousand kinds of fish" reveals the unusually rich fish fauna in these waters.

30. Pasiner, in another publication, states, "[s]pecies that migrate from the Mediterranean, such as, bonito, mackerel, kolios, bluefish, blue tuna, swordfish, sole, and red mullet enter the Black Sea in the spring to feed, and from late August to January they make their way back to the Aegean and Mediterranean through the İstanbul Strait, the Marmara, and the Çanakkale Strait. If the winter happens to be a warm one, they settle in the İstanbul Strait and the Marmara for a while and support a fruitful fishing season" (*Alabalıktan Zarganaya Türkiye Balıkları* 74).

31. Statement adapted from "Song of the Gavilan" in *A Sand County Almanac* 163. Italics mine.

32. See Artun Ünsal's historical survey in his book, *Boğaz'ın Beş Efenfisi*, [The Five Masters of the İstanbul Strait], for fish abundance and fisheries along the İstanbul Strait, dating from antiquity [as far back as 692 BC] to the present (13–63).

33. The Gulf of Saros, which extends across the northern part of the Gallipoli peninsula constitutes one of the most important fish breeding grounds in this area. For information on fish biodiversity in the Çanakkale Strait [both migratory and resident], see Pasiner, *Alabalıktan Zarganaya* 84–89.

34. *Seyahatname* [Book of Travels] is an invaluable source of historical and geographical knowledge. The first volume of *Seyahatname* is exclusively about İstanbul and was completed in 1630.

35. The original *Seyahatname* is in the Ottoman Turkish. I wish to acknowledge the help of historian, Professor Mehmet Seyitdanlıoğlu (Hacettepe University), for translating this extract from *Seyahatname* into present-day Turkish from which the English translation was done (the English translation is my own).

36. Tchihatchef was a distinguished member of the Russian Diplomatic Service, and served in İstanbul for a while, then he started his travels. Today his importance in Turkey lies in his books on the Turkish landscapes. He walked 14,000 kilometers across Anatolia—an achievement comparable to Alexander von Humboldt's—between the years 1847 and 1858, and published the eight-volume *Asie Mineure*.

37. See Deveciyan's historical map in his *Türkiye'de Balık ve Balıkçılık* for the locations of the 103 catching locations and 52 fish traps and weirs, in the İstanbul Strait and Marmara's Princes Islands (552–53).

38. Deveciyan states, "When freezing winds start, turning the waters of the Black Sea upside down in August, first bonitos start migrating and they enter the İstanbul Strait. . . . It takes them about a month to end up in the Marmara. A month after the bonitos, the torics start their migration. Around the time when the torics enter the İstanbul Strait, the mackerels approach the entrance to the İstanbul Strait, and they wait there for a while until the torics leave the Strait. Generally, torics complete their entrance to the Marmara towards the end of November. It is only then the mackerels start entering the İstanbul Strait; depending on the mild weather conditions, if the bonitos and torics are still around, the mackerels remain in the Strait for several weeks. When these fish are no longer in the Marmara, the mackerels arrive in the Marmara. The mackerels spend the winter in the Marmara, they reproduce and, towards mid spring, before the toriks reappear, start migrating back to the Black Sea. And the torics re-enter the Black Sea following the mackerels" (37–38).

39. This unprecedented "human density," is one of the four causes that disrupt "biotic self-renewal," as Leopold lists in his "The Land-Health Concept and Conservation." Leopold explains, "it is unthinkable that we shall stabilize our land without a corresponding stabilization of our density" (226).

40. *Denizler Kurudu* was published in 1972. But the narrative goes as far back as the 1950s—to the times when the seas were still resilient.

41. Dolphins were hunted in the Turkish waters until 1983 when it was finally banned.

42. The reference is to three dolphin species in these waters: the bottlenose dolphins, common dolphins, and harbor porpoise.

43. The term indicates competition, today, among the dolphin species for finding food.

44. For a revealing discussion of the use of dolphin oil in the past, see Acara, "Karadeniz Yunus 'Balıklarının' Sanayide Kıymetlendirilmeleri" [The Utilization of the Black Sea Dolphins in the Industries] 30–36.

45. *The Sea-Crossed Fisherman* takes up the issue of large-scale dolphin hunts in Turkish coastal waters in the early 1950s. For a study on dolphin harvests in *The Sea-Crossed Fisherman*, see Özdağ, "Reading Yaşar Kemal's *The Sea-Crossed Fisherman* in the Year of the Dolphin" 45–74.

46. This social cooperation in dolphins also appears in Karekin Deveciyan's book. He says, "[Dolphins] feed on small fish such as pilchard and mackerel. The reason why they destroy fishing nets is because they are so fond of eating them. They are so fond of them they destroy the fish traps and weirs. . . . However, dolphins are beneficial in that they always herd fish schools to the shores. For this very reason, those fishermen who are only able to do fishing in the shores, let alone getting angry with the dolphins, think that dolphins are performing a great service to them" (264).

47. Statement adapted from "Thinking Like a Mountain" in *A Sand County Almanac* 137. Italics mine.

48. The reference is to a fisherman, "Nuri," in *Denizler Kurudu* who took 40 swordfish in one single day (137).

49. Batur underlines the presence of a "sea ethic" in all of Koray's sea novels, namely, *Deniz Ağacı*, *Gelin Taşı*, and *Büyük Orfoz* (personal communications).

50. Ahmet's feelings of oneness with all that exists arises in a section of the narrative: "At that very moment, the feeling of being a part and parcel of nature opened up before [Ahmet]. With the bliss of understanding this magnificent but simple secret, Ahmet was taken by the pebbles, weeds, stones, trees, air, dirt and everything that came together in an uncertain shiver as he stood motionless, without a sound, grateful and with faith. He became 'one' with all that existed" (165).

51. See Alıçlı, "Marmara Denizi'nde Kılıç Balığı Üzerine Bir Derleme" [A Review about the Swordfish in the Marmara Sea] 319.

52. Statement adapted from Leopold, "The River of the Mother of God [1924]" 125. Italics mine.

53. One also needs to remember the fact that these waters are the most dangerous waterway in the world—the volume of ship traffic in the İstanbul Strait is five times heavier than the traffic in the Panama Canal; this leads to more pollution in this crucial area, every day, devastating remaining marine life.

54. For information on the early development of fisheries management in the United States, to check depletion in fish stocks by various causes including overharvesting, see Meine, *Correction Lines* 27–29. For information on the decline of fish populations across the world's oceans, see Safina, *Song for the Blue Ocean* (New York: Henry Holt & Co., 1999).

55. Leopold's words are, "This is wilderness, and wilderness it shall remain," in his essay "The River of the Mother of God [1924]," 125.

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