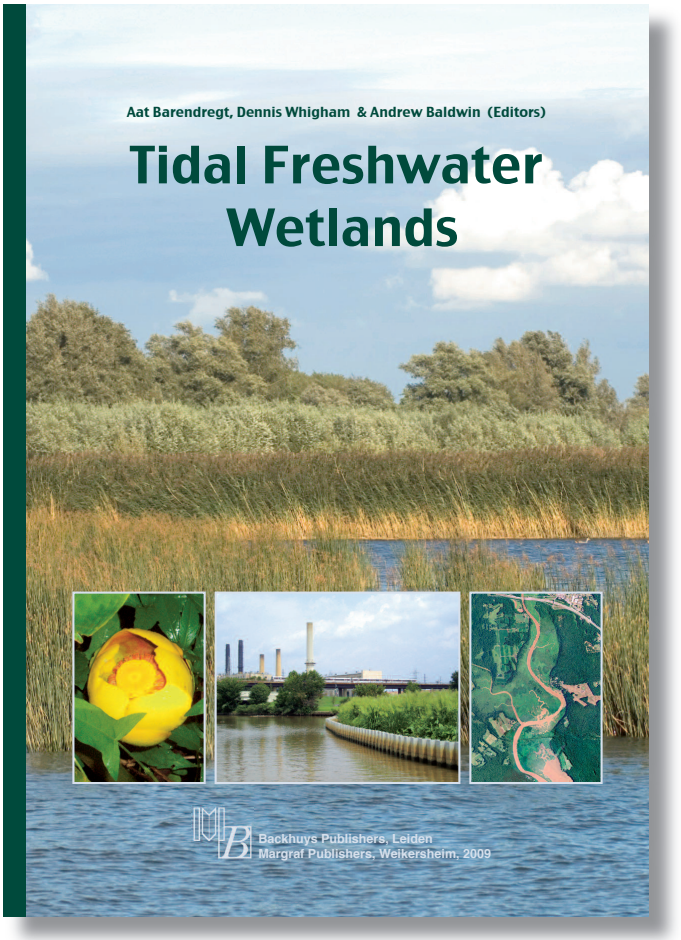
Chapter 10

PRIMARY PRODUCTION IN TIDAL FRESHWATER WETLANDS

Dennis F. Whigham



Tidal Freshwater Wetlands, edited by Aat Barendregt, Dennis Whigham & Andrew Baldwin
2009, viii + 320pp.; (incl. 16 colour plates), 21 x 29,7 cm, hardbound
ISBN 978-3-8236-1551-4

Backhuys Publishers, Leiden
Margraf Publishers, Weikersheim, 2009

TABLE OF CONTENTS

Margraf Publishers GmbH Scientific books, P.O. Box 1205, D-97985 Weikersheim, Germany.

Chapter 10

PRIMARY PRODUCTION IN TIDAL FRESHWATER WETLANDS

Dennis F. Whigham *
* *corresponding author - e-mail: whighamd@si.edu*

Abstract: Primary production of tidal freshwater wetlands is extremely high for most habitats. High levels of primary production are the result of several factors, including their location in nutrient-rich portions of estuaries and the presence of a tide (e.g., tidal subsidy) in a fresh water habitat. Primary production is high throughout the growing season because of the almost unique combination of annual and perennial species that dominate tidal freshwater wetlands. Perennials typically dominate the vegetation in the early part of the growing season and annuals dominate in the middle and later parts of the growing season. Estimates of production of individual species are over 2,000 g/m^2/yr. Belowground production is also high but there have been few studies of belowground dynamics of TFW plant species.

Nomenclature: Plant names follow the USDA PLANTS checklist (plants.usda.gov)

Keywords: productivity, primary production, nutrient limitations, peak biomass, tidal pulsing, annuals, perennials, belowground

INTRODUCTION

Tidal freshwater wetlands (TFW) that exist today are considered to be young depositional landforms (see: Chapter 4) that occur at the interface between non-tidal rivers and brackish estuaries (Odum et al. 1984, Simpson et al. 1983a, Mitsch & Gosselink 2000, Barendregt et al. 2006). Because of their landscape position they have a unique combination of characteristics that support high levels of primary productivity (Whigham et al. 1978, Simpson et al. 1983a, Odum et al. 1984). First, they occur in the tidal fresh zone of rivers and are influenced by twice-daily tides, a natural subsidy that supports high levels of primary production in estuarine ecosystems (Odum et al. 1995). Two other factors related to high levels of primary production are the location of tidal freshwater habitats within the river continuum and lack of salt stress. Macrophytes in TFW have been shown to be sensitive to salt stress (Ferren et al. 1981, Tiner & Burke 1995) and except for the portion of the tidal fresh zone that is adjacent to and mixes with brackish water, salinity is always less than 0.5 parts per thousand and salinity stress does not limit plant growth. Second, the tidal freshwater zone in river systems is typically eutrophic (Barendregt et al. 2006) and thus plant growth should not be nutrient-limited. This unique combination of factors (i.e., lunar tides in a nutrient-rich freshwater environment) is not found in any other type of ecosystem, except for a few fresh water environments (e.g., large water bodies such as the Great Lakes) that have small-scale wind-driven movements of water (seiches) that are similar to tides but do not occur at the same regularity.

In addition to high levels of primary production, other characteristic ecosystem responses are associated with fresh water tidal habitats. TFW typically have high biodiversity and support rare and endangered species (Barendregt et al. 2006). Many macrophytes that dominate TFW have high rates of decomposition (e.g., Odum et al. 1984, Morris 1986) and substantial nutrient loads are incorporated into substrates, especially in high marsh habitats, because of nutrient uptake by decomposing litter (Khan & Brush 1995), microbial processing (Fogel & Tuross 1999) and high rates of sediment deposition and subsequent burial of organic matter (Morse et al. 2004, Chapter 4). These and other subjects are the focus of other chapters in the book.

In this chapter I review the primary production literature for TFW. It is important to understand the levels of primary production in TFW in terms of the linkages between primary producers, secondary consumers, and nutrient dynamics of TFW (Odum et al. 1984). Several aspects of primary production are considered. First I compare and contrast recent estimates of primary production with literature reviews that were conducted in the 1970s, 1980s, and early 1990s. I then focus on patterns of primary production within different

Tidal Freshwater Wetlands, pp. 115-122
Edited by A. Barendregt, D.F. Whigham, A.H. Baldwin;

habitats and among species with different life history strategies. I also compare levels of primary production for species that occur in tidal as well as non-tidal freshwater wetlands. Following a section on the relationship between primary production and nutrient limitation, the review ends with a discussion of the linkages between the products of primary production and other organisms and processes in TFW.

ESTIMATES OF PRIMARY PRODUCTION

There have been few published journal articles or book chapters that contain estimates of primary production in TFW since early studies in the 1970s and 1980s (Table 1) and the publications of Whigham et al. (1978), Simpson et al. (1983a), Odum et al. (1984), Odum (1988), Whigham & Simpson (1992), and Mitsch & Gosselink (2000) contain many of the same estimates for TFW for North America. Very few estimates of primary production are available for TFW in Europe (Soetaert et al. 2004 and Barendregt in Table 1). The general patterns that emerged from the earlier research and syntheses have been further confirmed by a few more recent studies (Table 1).

There is a high degree of variation in estimates of primary production among different vegetation types (Table 1) in TFW (Whigham et al. 1978, Odum et al. 1984, 1995, Mitsch & Gosselink 2000), but they are almost always more productive than non-tidal freshwater wetlands with the same species (see below), and there is a large degree of overlap in estimates of primary production in TFW compared to other types of tidal wetlands. At the system level, Odum (1988) and Mitsch and Gosselink (2000) estimated that the total annual primary production of TFW ranged between 1,000 and 3,500 g/m^2/yr but measurements of individual species suggest that net above- and belowground production may attain levels between 6,000 – 8,500 g/m^2/yr (e.g., Sickels & Simpson 1985, Simpson et al. 1985).

Comparisons between vegetation types and species

Estimates of primary production vary from one vegetation type to another and differences between reported values depend on the method used to estimate production, whether or not the estimates include measurements of belowground production or biomass losses due to mortality of individuals and tissue loss during the growing season. There have been a few studies in which investigators have attempted to account for more than one of these components of annual production. Neubauer et al. (2000) offered one of the most complete analyses of primary production in a TFW, and several studies of communities and species in a TFW in New Jersey attempted to account for belowground biomass as well as changes in biomass and tissue losses during the growing season (Whigham & Simpson 1977, 1992, Whigham et al. 1978, Sickels & Simpson 1985, Simpson et al. 1985). Odum et al. (1983) also accounted for belowground biomass in their estimate of production of a *Zizaniopsis miliacea*-dominated TFW site in Georgia.

Belowground biomass of perennial species in TFW can be very large (e.g., Whigham & Simpson 1978) but it is difficult to convert measurements of belowground biomass into estimates of production because much of the biomass is composed of tissues that persist for more than one growing season. Based on the few data available, however, the amount of the net annual production that is allocated to belowground biomass appears to be between about 50 and 25%. Booth (1989) estimated that the amount of annual production of *Peltandra virginica*, a perennial species, allocated to belowground and aboveground biomass was about equal. Neubauer et al. (2000) made similar estimates working in a *Peltandra*-dominated TFW. The proportion of net annual production allocated to roots is less than 50% for annual species, in part, because annuals do not produce any long-term storage structures such as rhizomes and bulbs. *Ambrosia trifida* (Sickels & Simpson 1985) and *Zizania aquatica* var. *aquatica* (Whigham & Simpson 1977) root biomass was 45.9 and ~ 22% of the shoot biomass, respectively.

Fig. 1 shows estimates of annual production, for aboveground biomass only, for different vegetation types in TFW. The figure was compiled from Table 7 in Odum et al. (1984). All of the vegetation types shown in black bars were dominated by perennial species and the four vegetation types in the white bars were dominated by annual species. Aver-

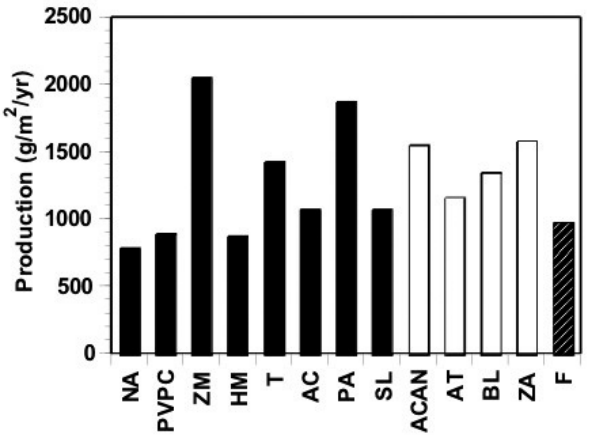


Figure 1. Estimates of productivity for herb-dominated TFW from Table 7 in Odum et al. (1984) and for forested TFW (F) from Fowler & Hershner (1989) and Megonigal (1996). Data were compiled for vegetation types dominated by perennial species (black bars), annuals (white bars) and forested TFW (stippled). Community types are: NA=*Nuphar lutea* (= *advena)*, PVPC = *Peltandra virginica-Pontederia cordata*, ZM = *Zizaniopsis miliacea*, HM = *Hibiscus moscheutos*, T = *Typha* spp., AC = *Acorus calamus*, PA = *Phragmites australis*, SL = *Sagittaria latifolia,* ACAN = *Amaranthus cannabinus*, AT = *Ambrosia trifida*, BL = *Bidens laevis*, ZA = *Zizania aquatica*, F = forested TFW.

Table 1. Estimates of primary production for tidal freshwater wetlands. All values are g/m^2/yr of organic matter on a dry weight basis for macrophytes and mg C/m^2/hr for bacterial productivity. Many of the estimates were taken from Table 1 in Odum et al. (1984) and readers should consult that publication for the original citations.

Habitat or species	Above ground	Total	Measurement technique	Location of study	Source
High to low marsh		1,430 – 1,072[1]	Gas exchange and multiple harvests	Virginia - Pamunkey River (USA)	Neubauer et al. (2000)
High to low marsh	775.7		Multiple harvests	Virginia - Pamunkey River (USA)	Doumlele (1981)
High to low marsh	2,179 – 1,176		Multiple harvests	Scheldt River (Belgium)	Soetaert et al. (2004)
High marsh	457.1 - 435.7[2]		Harvest at peak biomass	Virginia - Mattaponi River (USA)	Morse et al. (2004)
High to low marsh	834 - 84[4]		Multiple harvests	Quebec - St. Lawrence River (Canada)	Gilbert (1990)
High to low marsh	816 (range appr. 1,650 - 350[7]		Multiple harvests	Washington - Nooksack River (USA)	Disraeli & Fonda (1979)
High marsh (*Schoenoplectus americanus* fresh water – to *Distichlis spicata* and *Jaumea carnosa* – slightly brackish)	1,600 – 500[3]		Peak biomass	California - Sacramento and San Joaquin Rivers (USA)	Lisa Schile & Tom Parker (pers. comm.)
Low marsh (*Zizania aquatica*, *Pontederia cordata*, *Peltandra virginica* = dominants)	1,100 - 982		Multiple harvests with focus on peak biomass	Maryland - Patuxent River (USA)	Flemer et al. (1978)
Low marsh (*Schoenoplectus acutus* = dominant)	2,000 - 600		Peak biomass	California - Sacramento and San Jaquinto Rivers (USA)	Lisa Schile & Tom Parker (pers. comm.)
Calamagrostis canadensis	127		Multiple harvests[6]	Massachusetts - North River Marsh (USA)	Bowden et al. (1991)
Forested tidal freshwater wetland	1,227.2		Allometric measurements of trees, litterfall measurements, multiple harvest of understory herbaceous vegetation	Virginia - Pamunkey River (USA)	Fowler & Hershner (1989)
Forested tidal freshwater wetland	979 - 708		Allometric measurements of trees, litterfall measurements and harvest of understore herbs	North Carolina - White Oak River (USA)	Megonigal (1996)
Salix-dominated stand [10]	2,757.4		One harvest	Oude Maas (The Netherlands)	Aat Barendregt (pers. comm.)
Carex lacustris	236		Multiple harvests[6]	Massachusetts - North River Marsh (USA)	Bowden et al. (1991)
Carex lyngbyei	1,742		Harvest at peak biomass	Washington - Skagit River (USA)	Ewing (1986)
Carex lyngbyei[8]	1,390 – 1,086		Harvest at peak biomass	Washington - Nisquallly River (USA)	Burg et al. (1980)
Impatiens capensis	8,492		Multiple harvests	New Jersey - Delaware River (USA)	Simpson et al. (1985)
Leersia oryzoides	58 - 58[9]		Multiple harvests	Virginia - Pamunkey River (USA)	Perry & Hershner (1999)
Peltandra virginica	769 – 1,552[2]		Two harvests	Virginia - Chickahominy River (USA)	Chambers & Fourqurean (1991)
Peltandra virginica	423		Multiple harvests	Virginia - Pamunkey River (USA)	Doumlele (1981)
Peltandra virginica	214 - 370[9]		Multiple harvests	Virginia - Pamunkey River (USA)	Perry & Hershner (1999)
Phragmites australis	2,147.7		One harvest	Oude Maas (The Netherlands)	Aat Barendregt (pers. comm.)
Polygonum punctatum	45		Multiple harvests	Virginia - Pamunkey River (USA)	Perry & Hershner (1999)
Pontederia cordata	31		Multiple harvests	Virginia - Pamunkey River (USA)	Perry & Hershner (1999)
Sagittaria latifolia		685[2]	Multiple harvests	Quebec - St. Lawrence River (Canada)	Gilbert (1990)
Sagittaria rigida		89[2]	Multiple harvests	Quebec - St. Lawrence River (Canada)	Gilbert (1990)
Scirpus americanus		436[2]	Multiple harvests	Quebec - St. Lawrence River (Canada)	Gilbert (1990)
Typha latifolia	575		Multiple harvests[6]	Massachusetts - North River Marsh (USA)	Bowden et al. (1991)

continued

Table 1 (continued)

Habitat or species	Above ground	Total	Measurement technique	Location of study	Source
Zizania aquatica		196[2]	Multiple harvests	Quebec - St. Lawrence River (Canada)	Gilbert (1990)
Zizania aquatica	55		Multiple harvests	Virginia – Pamunkey River (USA)	Perry & Hershner (1999)
Zizania aquatica var. *aquatica*	560 – 2,091[5]		Multiple methods	New Jersey, Pennsylvania, Maryland, Virginia (USA)	Whigham & Simpson (1997)
Zizania aquatica var. *aquatica*		1,453[2]	Multiple harvests	New Jersey – Delaware River (USA)	Whigham & Simpson (1977)
Zizaniopsis miliacea		1,531[2]	Two harvests	Georgia – Augustine Creek (USA)	Odum et al. (1983)

[1]Estimates in Neubauer et al. (2000) were given in g C/m^2/yr and were doubled (based on the assumption that half of the organic matter is carbon) to estimate g/m^2/yr.
[2]Means.
[3]Range.
[4]Highest and lowest means for 7 vegetation types.
[5]Range of estimates from studies in New Jersey, Pennsylvania, Maryland, and Virginia as cited in Table 1 in Whigham and Simpson (1977).
[6]Total aboveground biomass based on the sum of live and dead aboveground biomass for the month when the total of the two measurements was the greatest.
[7]Mean biomass for four sites representing different elevations. Salinity ranged from a mean of 0.5 to 1.21 (July-October) along the elevation gradient. *Carex lyngbyei* was the dominant species at the sites with the highest biomass.
[8]Range of values for sites dominated by *Carex lyngbyei* and *Festuca rubra*. From the original publication it was not possible to determine if these two vegetation types were truly tidal freshwater but it is likely that there was, at times, brackish water intrusion into these two vegetation types.
[9]Biomass sampled in 1974 (value on left) and 1987 (value on right) in the same wetland. In 1974, the site was entirely fresh water but by 1987, brackish water had started to intrude into the site.
[10]Other species present at the time of the autumn sampling were: *Ranunculus repens*, *Cardamine pratense*, *Urtica dioica*, *Anthriscus sylvestris*, *Symphytum officinale*, *Heracleum sphondyleum*, *Valeriana officinalis*, *Agrostis stolonifera*, *Calystegia sepium*, *Rumex* sp., *Sonchus* sp. and moss species (e.g., *Eurhyngium praelongum*). Biomass estimate includes 204.4 g of herbaceous vegetation, 497.0 g of *Salix* leaves, and 2,056 g of the *Salix* branches/m^2.

age production for the annual-dominated communities was greater than 1,000 g/m^2/yr while only three vegetation types dominated by perennials averaged more than 1,000 g/m^2/yr. The three perennial communities with the highest estimates of production are all dominated by clonal species (species of *Typha*, *Phragmites australis*, *Zizaniopsis miliacea*) that form dense stands and have shoots that are typically taller than 1.5 meters (McCormick & Somes 1982). The perennial communities with lower estimates of annual production are, with one exception, dominated by shorter broad-leaved perennials (*Nuphar lutea*, *Pontederia cordata, Peltandra virginica*, *Acorus calamus, Sagittaria latifolia*). The only exception to this pattern is a community type dominated by *Hibiscus moscheutos*, a species that also has tall shoots but does not spread clonally and does not have a high shoot density compared to *Typha*, *Phragmites,* and *Zizaniopsis*.

Latitudinal comparisons

Primary production has been measured at relatively few TFW sites but general latitudinal comparisons are possible for the Atlantic and Pacific coasts of North America (Table 1). On the Atlantic coast, production of some species and habitats is lower in the north (e.g., sites in the St. Lawrence River - Canada, North River - Massachusetts) where the growing season is shorter and where the potential impacts of ice formation and scouring would be greatest. The highest levels of production measured in the St. Lawrence River (~ 650 – 850 g/m^2/yr) overlap, however, with production estimates for some vegetation types in the mid-Atlantic region (e.g., New Jersey, Maryland, Virginia). There are too few data from TFW in southern sites to determine if the longer growing season manifests itself in higher levels of production compared to mid-Atlantic sites (Table 1; *Zizania aquatica* in New Jersey and *Zizaniopsis miliacea* in Georgia) but data from floating TFW, a variant of TFW that occur on the Gulf coast of the USA (Sasser & Gosselink 1984, Sasser et al. 1995b, Chapter 15), indicate that production levels are comparable.

Based on only a few studies, there is no clear latitudinal pattern in primary production from Washington and Oregon in the north to California in the south and production estimates vary from about 1,700 to 500 g/m^2/yr (Table 1). Production of *Carex lyngbyei*-dominated sites in tidal fresh water and slightly brackish sites on the Pacific northwest coast (e.g., Ewing 1986) appear to have the same general level of production as *Schoenoplectus americanus*-dominated sites in California (Table 1) and there does not appear to be a latitudinal trend (Hutchinson 1986). A general feature of west coast TFW is that most seem to be periodically influenced by the intrusion of brackish water during droughts or extreme

storm events. In San Francisco Bay, many wetlands occur behind dikes and breaches in the dikes allow brackish water to enter sites that are normally fresh water (T. Parker pers. comm.).

Comparisons of species that grow in tidal and non-tidal freshwater wetlands

Few investigators have measured primary production at the same time in tidal and non-tidal freshwater wetlands but the few data that are available suggest that the tidal subsidy (Odum et al. 1995) results in increased production. Odum et al. (1983) found that the production of *Zizaniopsis miliacea*-dominated vegetation was higher in tidal portions of the Savannah River (1,531 g/m^2/yr) compared to areas that had been tidal but were converted to non-tidal wetlands for purposes of rice growing (1,172 g/m^2/yr). The differences in production in tidal and non-tidal habitats is likely due to elements of the tidal subsidy, which include the delivery of nutrients in flood tides, the removal of metabolic by-products in the ebb tide, and tidal pumping of the sediments which would enable oxygen to more effectively enter the substrate.

A species that occurs over a wide range of habitats, including TFW, is the annual *Impatiens capensis*. In TFW it is widespread and a common species that is among a group of annuals that often dominates the biomass from mid-summer until the end of the growing season (Whigham & Simpson 1992). Simpson et al. (1985) measured a wide range of variables for terrestrial and wetland populations of *Impatiens capensis* in New Jersey, USA and found that the highest level of production clearly occurred in TFW (Fig. 2).

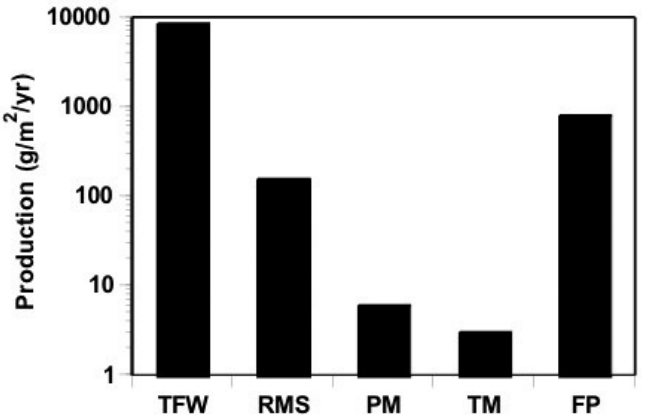


Figure 2. Production estimates (means) of the annual species *Impatiens capensis* in a tidal freshwater wetland (TFW) and in four non-tidal wetlands (RMS = red maple swamp, PM = *Phragmites*-dominated wetland, TM = *Typha*-dominated wetland, FP = forested riverine floodplain). Source: Simpson et al. (1985).

Inter-annual variations in primary production

The only effort to compare inter-annual variation in production in TFW was published in an article by Whigham & Simpson (1992) in which they summarized data from a multi-year study of a TFW in New Jersey. Whigham and Simpson then compared their data with production estimates from other multi-year studies in which the authors studying saline, brackish, and non-tidal freshwater wetlands had measured production for three or more years. The metric that Whigham and Simpson used to compare inter-annual variation in production was the coefficient of variation (CV). They found that the highest level of variation occurred in brackish wetlands that experienced salt stress (range = 75.0 - 43.4 %). The CV was less in saline tidal wetlands (range = 46.5 – 2.2 %) and varied between 40 – 15 % for non-tidal freshwater wetlands. The CV for the TFW studied by Whigham and Simpson was 22.8, which was in the lower end of the range for non-tidal fresh water wetlands.

Whigham and Simpson (1992) provided two explanations for the relatively low CV of TFW. First, with regular tidal inundation of nutrient-rich fresh water, vegetation in TFW is not moisture- or nutrient-limited (see below) nor salt-stressed, resulting in little year to year variation in production. Perhaps the most important feature, however, is that TFW have a high macrophyte diversity with a large number of annual and perennial species. They suggested that this feature "allows for species compensation so that annual production levels remain high and fairly constant even though there may be shifts in the distribution and abundance of species from one year to the next". High diversity enables the system to be buffered against changing environmental conditions, features that do not occur in most brackish and saline wetlands, which experience seasonal changes in salinity, or in non-tidal fresh water wetlands, which can experience seasonal and annual variation in water availability.

Nutrient limitation and primary production

Primary production in saline and brackish tidal wetlands in the temperate zone has been shown to be typically nitrogen-limited (e.g., Callaway et al. 2003, Tyler et al. 2003a) but TFW, similar to other types of fresh water ecosystems, are typically phosphorus-limited. Templer et al. (1998) suggested, however, that macrophytes in TFW are most likely N-limited.

I located data from only four experimental studies of nutrient limitation in TFW. They all demonstrate that primary production is not nutrient-limited, most likely because in modern times, TFW occur in portions of river systems that receive large inputs of anthropologically derived nutrients and sediments.

Morse et al. (2004) fertilized plots in TFW along the Mattaponi River (Virginia) with N and P and found no significant increase in aboveground production. Similar results were found for fertilized *Peltandra virginica* (Chambers & Fourqurean 1991) along the Chickahominy River (Virginia). Sibylle et al. (1999) found no growth response and only minimal responses in plant tissue N for *Typha* in a Hudson River TFW. Morris (as reported in Bowden et al. 1991) found similar results for the North River Marsh in Massachusetts. Sybille et al. (1999) also found that the application of urea did not result in any significant responses of the microbial community, further demonstrating that TFW are almost always nutrient-rich.

DISCUSSION

As suggested throughout this review, differences in estimates of primary production of TFW vary for a number of reasons. Perhaps the most common factor that has varied from one study to another is the method used to measure production. Investigators have used a variety of techniques, including measurements of gas exchange (e.g., Neubauer et al. 2000), but most estimates have been based on harvesting vegetation at peak aboveground biomass (e.g., McCormick & Somes 1982). This technique, while valid and commonly used in all types of wetlands (Mitsch & Gosselink 2000), has been shown to lack accuracy for TFW where there is strong seasonal dynamics among annual and perennial species (Whigham & Simpson 1992, Simpson et al. 1983a, Whigham & Simpson 1992). In many of the vegetation types found in TFW, biomass in the first half of the growing season is dominated by perennial species while annuals (Fig. 3) dominate many habitats later in the growing season (Whigham & Simpson 1976a, Whigham & Simpson 1992, Chapter 5).

In habitats where there is a pronounced seasonal shift in dominance between annuals and perennials, estimates of primary production are more accurate when biomass is harvested throughout the growing season to encompass peak standing crops of as many species as possible. This technique was used by Whigham and Simpson (1992) to obtain estimates of annual primary production that ranged between approximately 1,500 and 3,000 g/m^2 over an 11 year period for a high marsh

Figure 3. Wetland ecology students in a TFW on the Patuxent River (Maryland, USA) late in the growing season (October). Two annual species, *Polygonum arifolium* and *Bidens laevis*, comprise the majority of herbaceous vegetation visible in the foreground. The predominance of annual plants over perennials late in the season is typical of many east coast TFW. Photo by A. Baldwin.

habitat in the Hamilton Marshes (Delaware River, USA). As described above, however, these estimates are certainly lower than actual production because they do not account for the allocation of net annual production to belowground biomass, a large component of total plant biomass for most perennial species (Whigham & Simpson 1978, Booth 1989, Neubauer et al. 2000). Neither do most estimates of primary production account for plant mortality during the growing season (i.e., self-thinning among annual species (Weiner & Whigham 1988) or the shedding of plant parts during the growing season (e.g., Sickels & Simpson 1985).

While it is difficult to accurately measure primary production in TFW, additional studies would not likely change existing estimates of the range primary production nor would they alter the conclusion that most vegetation types in tidal TFW are highly productive. There is a clear need, however, for additional studies of primary production, such as those of Neubauer et al. (2000), that allow us to gain a better understanding of how different components of primary production support food webs and ecosystem processes. There is also a need for additional measurements of primary production that are designed to more fully assess linkages between components of primary production and adjacent aquatic and terrestrial ecosystems. The issues that I now address are related to the fate of the biomass produced and what roles it plays in the overall functioning of TFW, including interactions with adjacent tidally influenced riverine ecosystems.

The products of primary production (e.g., leaves, seeds, tubers, rhizomes) are utilized directly or indirectly by animals (e.g., Barbour & Kiviat 1986, Anderson & Schmidt 1989, Connors et al. 2000, Barendregt et al. 2006), thus the biomass produced by plants in TFW support *in situ* and adjacent aquatic and terrestrial foodwebs (Odum et al. 1984). In addition to supporting local ecosystems, plant biomass produced in TFW also supports more distant ecosystems by providing important resting and feeding sites for migratory birds (Odum et al. 1984, Meanley 1996) and for providing rearing and breeding habitat for migratory fish (Odum et al. 1984, Barendregt et al. 2006).

With the exception of long-lived belowground biomass that turns over slowly, most of the net annual production of herb-dominated TFW enters the estuarine detritus food web. Neubauer et al. (2000), for example, estimated that almost 54% of the net annual production of a TFW in Virginia entered aquatic ecosystems through the processes of decomposition and leaching. The primary mechanism by which the products of primary production enter the detritus food web is decomposition.

Many macrophytes that dominate TFW have aboveground tissues that decompose rapidly (e.g., Odum & Heywood 1978, Whigham et al. 1989) but tissues of some plants (e.g., of *Typha* spp.) decompose more slowly (Odum et al. 1984, Findlay et al. 1990). The seasonal pattern of litter production and litter decomposition clearly influences patterns of nutrient exchange within TFW, between TFW and adjacent tidal streams (e.g., Simpson et al. 1983a, Bowden et al. 1991, Findlay et al. 2003), as well as the dynamics of microbial communities (e.g., Sinsabaugh & Findlay 1995). TFW species that produce tissues that decompose rapidly mostly influence the movement of nutrients within TFW and adjacent tidal creeks and rivers (Findlay et al. 1990, Sinsabaugh & Findlay 1995, Neubauer & Anderson 2003). Species that produce litter that decomposes more slowly, on the other hand, undoubtedly contribute to the *in situ* burial of litter and ultimate incorporation of organic and nutrients matter into the substrate of TFW (Findlay et al. 1990, Bowden et al. 1991, Morse et al. 2004).

The pattern that has emerged from the few studies of nutrient and carbon exchange that have been conducted in TFW suggest that they are mostly transformed nutrients and that the net exchanges between TFW and tidal rivers are typically small in magnitude (Simpson et al. 1978, 1983b, Findlay et al. 1998b, Bowden et al. 1991). In fact, sediment delivery from upstream non-tidal systems seems to be the primary mechanism for nutrient input to TFW (Serodes & Troude 1984, Odum 1988, Orson et al. 1990, Morse et al. 2004, Chapter 4).

Tidal freshwater wetlands are ecosystems where sediment deposition is important (references in previous para-

Figure 4. *Phragmites australis*, shown in this photograph from a restored TFW on the Anacostia River in Washington, DC, is a C_3 species that is expected to thrive in response to increased carbon dioxide. Because a large amount of net annual production is stored in belowground roots and rhizomes, the surface elevation of wetlands dominated by this species may be able to keep pace with rising sea levels. Photo by A. Baldwin.

graph) and the relationship between primary production and sediment deposition may play an important role in determining the fate of TFW in response to sea-level rise, primarily through their ability to track changes in sea-level, an ongoing process that is accelerating (e.g., Morris et al. 2002). Within estuarine systems that are large enough to include saline, brackish and TFW, sea-level rise will likely have the greatest impact on TFW. Plant biodiversity and productivity will decrease in response to increased flooding (Simpson et al. 1983a, Baldwin et al. 2001) and salt stress (Ferren et al. 1981, Perry & Hershner 1999), and eventually existing TFW will be replaced by brackish tidal wetlands and as sea-level rises, TFW will have to migrate upstream in habitats that are now non-tidal rivers. This type of ecosystem-migration will be possible as long as the river valleys are not too narrow (i.e., there is a floodplain upon which TFW can establish) and development (i.e., landfills, docks and wharves associated with urbanization) does not preclude it (see: Chapter 13). As estuarine wetlands migrate in response to sea-level rise, primary production will play an important role in determining how abundant TFW will be in the future. As most macrophytes in TFW have the C_3 photosynthetic pathway, it is likely that primary production will increase in response to increased levels of atmospheric carbon dioxide that are associated with climate change (Curtis et al. 1989) and related sea-level rise. Higher levels of productivity of C_3 plants will potentially result in increased storage of carbon belowground which, in combination with riverine inputs of sediment, will enable substrates of TFW to accrete vertically and keep pace with sea-level rise (Fig. 4). This prediction is, however, untested and a useful focus of future research on TFW would be the effects of increased carbon dioxide on primary production and substrate characteristics (e.g., changes in surface elevations).

ACKNOWLEDGMENTS

The manuscript was improved by comments from Mary Leck. Tom Parker provided references and unpublished data for tidal freshwater wetlands on the Pacific coast of the USA.

REFERENCES

The references in this volume derive from the international literature (e.g., periodicals) and moreover, due to the review of many less-described aspects, also from local periodicals, books and reports from North America and Europe. To assist the reader we incorporated the town and country of publication, except for the well-known cities New York, Washington, London, Amsterdam, Berlin and Paris. Some countries frequently mentioned are indicated by an abbreviation: USA (United States of America; in the reference the town including the state), UK (United Kingdom), DK (Denmark), GER (Germany), NL (The Netherlands), BEL (Belgium), and FR (France). The sequence of the references is alphabetically for the one- and two author publications; the publications with three and more authors (et al.) are arranged by year of publication, eventually followed by the indication a or b. SI = Special Issue.

Abbott CC (1898) Travels in a tree-top. J.B. Lippincott Co., Philadelphia, PA, USA.

Able KW, Hagan SM & Brown SA (2003) Mechanisms of marsh habitat alteration due to *Phragmites*: response of young-of-the-year mummichog (*Fundulus heteroclitus*) to treatment for *Phragmites* removal. Estuaries 26: 484-494.

Adams MA & Williams GL (2004) Tidal marshes of the Fraser River estuary: composition, structure, and history of marsh creation efforts to 1997. In: Groulx BJ, Mosher DC, Luternauer JL & Bilderback DE (eds) Fraser River delta, British Columbia: issues of an urban estuary, Geological Survey of Canada Bulletin 567, pp. 147-172. Geological Survey of Canada, Vancouver, BC, Canada.

Aerts R (1997) Climate, leaf litter chemistry and leaf litter decomposition in terrestrial ecosystems: a triangular relationship. Oikos 79: 439-449.

Ahnert F (1988) Modeling landform change. In: Anderson MG (ed) Modelling geomorphological systems, pp. 375-400. John Wiley and Sons, New York.

Alaska Department of Fish and Game (2000) Alaska Department of Fish and Game writer's guide. Alaska Department of Fish and Game, Juneau, AK, USA.

Alaska Department of Fish and Game (2006) Copper River critical habitat area (http://www.wildlife.alaska.gov).

Alexandre A, Meunier J-D, Colin F & Koud J-M (1997) Plant impact on the biogeochemical cycle of silicon and related weathering processes. Geochimica et Cosmochimica Acta 61: 677-682.

Allanson B & Baird D (1999) Estuaries of South Africa. Cambridge University Press, Cambridge, UK.

Allen JA (1992) Cypress-tupelo swamp restoration in southern Louisiana. Restoration and Management Notes 10: 188-189. USA.

Allen JA, Pezeshki SR & Chambers JL (1996) Interaction of flooding and salinity stress on baldcypress (*Taxodium distichum*). Tree Physiology 16: 307-313.

Allin CC (1993) Mute swan mid-summer survey report for the Atlantic flyway. Rhode Island Department of Environmental Management, Division of Fish and Wildlife, Providence, RI, USA.

An S & Gardner WS (2002) Dissimilatory nitrate reduction to ammonium (DNRA) as a nitrogen link, versus denitrification as a sink in a shallow estuary (Laguna Madre/Baffin Bay, Texas). Marine Ecology Progress Series 237: 41-50.

Anderson AB & Schmidt RE (1989) Survey of larval and juvenile fish populations in water-chestnut (*Trapa natans*) beds in Tivoli South Bay, a Hudson river tidal marsh. In: Blair EA & Waldman JR (eds) Polgar fellowship reports of the Hudson River National Estuarine Research Reserve Program, pp. vi-1-34. Hudson River Foundation, New York.

Anderson RR, Brown RG & Rappleye RD (1968) Water quality and plant distribution along the upper Patuxent River, Maryland. Chesapeake Science 9: 145-156. USA.

Ankney CD (1995) An embarrassment of riches: too many geese. Journal of Wildlife Management 60: 217-223.

Antunes C & Costa Dias S (2005) The faunal composition of the euryhaline section of the Lima river estuary. Journal of Ichthyology 45 (Suppl. 1): 163-170.

Antunes C & Weber M (1996) The glass eel fishery and the by-catch in the Rio Minho after one decade (1981-1982 and 1991-1992). Archives of Polish Fisheries 4: 131-139.

AOU (American Ornithologists' Union) (1998) Check list of North American birds. American Ornthologists' Union, Washington, DC, USA.

Apfelbaum SI & Sams CE (1987) Ecology and control of reed canary grass (*Phalaris arundinacea* L.). Natural Areas Journal 7: 69-74. USA.

Arendse MC & Barendregt A (1981) Magnetic orientation in the semi-terrestrial amphipod *Orchestia cavimana*, and its interrelation with photo-orientation and water loss. Physiological Entomology 6: 333-342.

ARGE Elbe (1991) Das oberflächennahe Zoobenthos der Elbe als Indikator für die Gewässerqualität. Wassergütestelle Elbe. Arbeitsgemeinschaft für die Reinhaltung der Elbe, Hamburg, GER.

ARGE Elbe (2002) Wassergütedaten der Elbe. Zahlentafel 1999. Arbeitsgemeinschaft für die Reinhaltung der Elbe, Hamburg, GER.

Arthur JF, Ball MD & Baughman SY (1996) Summary of federal and state water project environmental impacts in the San Francisco Bay-Delta Estuary, California. In: Hollibaugh JT (ed) San Francisco: the ecosystem, pp. 445-495. Pacific Division, AAAS, San Francisco, CA, USA.

Aschenberg H (1992) Deichschutz und Binnenentwässerung im Stromspaltungsgebiet der Elbe im Raum Hamburg. In: Kramer J & Rohde H (eds) Historischer Küstenschutz – Deichbau, Inselschutz and Binnenentwässerung an Nord- und Ostsee, pp. 289-318. Verlag Konrad Wittwer, Stuttgart, GER.

Asselman NEM & Van Wijngaarden M (2002) Development and application of a 1D floodplain sedimentation model for the River Rhine in The Netherlands. Journal of Hydrology 268: 127-142.

Attrill MJ (1998) A rehabilitated estuarine ecosystem: the environment and ecology of the Thames estuary. Kluwer Academic Publishers, Dordrecht, NL.

Attrill MJ (2002) A testable linear model for diversity trends in estuaries. Journal of Animal Ecology 71: 262-269.

Attrill MJ, Rundle SD & Thomas RM (1996) The influence of drought-induced low freshwater flow on an upper-estuarine macroinvertebrate community. Water Resources 30: 261-268.

Atwater BF & Belknap DF (1980) Tidal-wetland deposits of the Sacramento-San Joaquin Delta, California. In: Douglas RG, Bouma AH, Ingle JC & Colburn IP (eds) Quaternary depositional environments of the Pacific Coast, pp. 89-103. Pacific Coast Paleogeography Symposium 4, Field ME. Pacific Section Society Economic Paleontologists and Mineralogists, Los Angeles, CA, USA.

Atwater BF (1979) Ancient processes at the site of Southern San Francisco Bay, movement of the crust and changes in sea level. In: Conomos TJ (ed) San Francisco Bay: the urbanized estuary, pp. 31-45. American Association Advancement Science, Pacific Division, San Francisco, CA, USA.

Atwater BF (1987) Evidence for great Holocene earthquakes along the outer coast of Washington State. Science 236: 942-944.

Atwater BF, Hedel CW & Helley EJ (1977) Late Quaternary depositional history, Holocene sea-level changes, and vertical crustal movement, southern San Francisco Bay, California. Professional Paper 1014. United States Geological Survey, San Francisco, CA, USA.

Atwater BF, Conrad SG, Dowden JN, Hedel CW, MacDonald RL & Savage W (1979) History, landforms, and vegetation of the estuary's tidal marshes. In: Conomos TJ (ed) San Francisco Bay: the urbanized estuary, pp. 347-385. American Association for the Advancement of Science, Pacific Division, San Francisco, California, USA.

Aust WM, Mader SF, Mitchell LJ & Lea R (1990) An approach to the inventory of forested wetlands for timber-harvesting impact assessment. Forest Ecology and Management 33-34: 215-225.

Austin K & Findlay S (1989) Benthic bacterial biomass and production in the Hudson River Estuary. Microbial Ecology 18: 105-116.

Avoine J, Allen JP, Nichols M, Salomon JC & Larsonneur C (1981) Suspended-sediment transport in the Seine Estuary, France: effects of man-made modifications on estuary-shelf sedimentology. Marine Geology 40: 119-137.

Baeyens G & Martinez ML (2004) Animal life on coastal dunes: from exploitation and prosecution to protecting and monitoring. In: Martinez ML & Psutty NP (eds) Coastal dunes, Ecology and Conservation, pp. 280-296. Ecological Studies 171, Springer-Verlag, Berlin.

Baeyens W (2005) Overview of trace metal contamination in the Scheldt estuary and effect of regulatory measures. Hydrobiologia 540: 141-154.

Bailey DE, Perry JE & DeBerry DA (2006) *Aeschynomene virginica* habitat in a tidal freshwater marsh, James City County, Virginia, USA. Banisteria 27: 3-9. USA.

Bakker J & Van Duijn H (1999) Effecten van inundatie op de Mariapolder. MSc Thesis Physical Geography, Utrecht University, Utrecht, NL.

Baldwin AH (2004) Restoring complex vegetation in urban settings: the case of tidal freshwater marshes. Urban Ecosystems 8: 125-137.

Baldwin AH (2007) Vegetation and seed bank studies of salt-pulsed swamps of the Nanticoke River, Chesapeake Bay. In: Conner W, Doyle T & Krauss K (eds) Ecology of tidal freshwater swamps of the southeastern United States, pp. 139-160. Springer-Verlag, Berlin.

Baldwin AH & DeRico EF (1999) The seed bank of a restored tidal freshwater marsh in Washington, DC. Urban Ecosystems 3: 5-20.

Baldwin AH & Mendelssohn IA (1998) Response of two oligohaline marsh communities to lethal and nonlethal disturbance. Oecologia 116: 543-555.

Baldwin AH & Pendleton FN (2003) Interactive effects of animal disturbance and elevation on vegetation of a tidal freshwater marsh. Estuaries 26: 905-915.

Baldwin AH, McKee KL & Mendelssohn IA (1996) The influence of vegetation, salinity, and inundation on seed banks of oligohaline coastal marshes. American Journal of Botany 83: 470-479.

Baldwin AH, Egnotovich MS & Clarke E (2001) Hydrologic change and vegetation of tidal freshwater marshes: field, greenhouse, and seed bank experiments. Wetlands 21: 519-531.

Baldwin AH, Hammerschlag RS & Cahoon DR (2009) Evaluation of restored tidal freshwater wetlands. In: Perillo GME, Wolanski E, Cahoon DR & Brinson MM (eds) Coastal wetlands: an integrated ecosystem approach, pp. 801-831. Elsevier, Oxford, UK.

Barbour JG & Kiviat E (2007) Middle Ground Island. Hudsonia Ltd., Annandale, NY, USA.

Barbour S & Kiviat E (1986) A survey of Lepidoptera in Tivoli North Bay (Hudson River Estuary). In: Cooper JC (ed) Polgar Fellowship Reports of the Hudson River National Estuarine Sanctuary Program, 1985, pp. iv-1 to iv-26. New York State Department of Environmental Conservation, Annandale, NY, USA.

Barendregt A (1980) Vergelijkend onderzoek naar de aktieve bodemfauna van de getijdegrienden langs Oude Maas (Z.H.). MS Thesis, Zoological Museum, Utrecht University, NL.

Barendregt A (2005) The impact of flooding regime on ecosystems in a freshwater tidal area. Ecohydrology & Hydrobiology 5: 95-102.

Barendregt A, Whigham D, Meire P, Baldwin A & Van Damme S (2006) Wetlands in the tidal freshwater zone. In: Bobbink R, Beltman B, Verhoeven JTA & Whigham DF (eds) Wetlands: function, biodiversity, conservation, and restoration, Ecological Studies - Volume 191, pp. 117-148. Springer-Verlag, Berlin.

Barras JA, Beville S, Britsch D, Hartley S, Hawes S, Johnston J, Kemp P, Kinler Q, Martucci A, Porthouse J, Reed D, Roy K, Sapkota S & Suhayda J (2003) Historical and projected coastal Louisiana land changes: 1978-2050. USGS Open File Report 03-334, Lafayette, LA, USA.

Barrett NE (1994) Vegetation patch dynamics in freshwater tidal wetlands. PhD Dissertation, The University of Connecticut. Storrs, CT, USA.

Bart D & Hartman JM (2003) The role of large rhizome dispersal and low salinity windows in the establishment of common reed, *Phragmites australis*, in salt marshes: new links to human activities. Estuaries 26: 436-443.

Bartlett KB, Bartlett DS, Harriss RC & Sebacher DI (1987) Methane emissions along a salt marsh salinity gradient. Biogeochemistry 4: 183-202.

Bartoldus CC (1990) Revegetation and production in a constructed freshwater tidal marsh. PhD Dissertation, George Mason University, Fairfax, VA, USA.

Bartoldus CC & Heliotis FD (1989) Factors affecting survival of planted materials in Marley Creek constructed freshwater tidal marsh, Maryland. Transportation Research Record 1224: 1-5. USA.

Bartoli F (1983) The biogeochemical cycle of silicon in two temperate forest ecosystems. Ecological Bulletin 35: 469-476.

Bazzaz FA (1990) The response of natural ecosystems to the rising global CO_2 levels. Annual Review of Ecology and Systematics 21: 167-196.

Bedford BL, Walbridge MR & Aldous A (1999) Patterns in nutrient availability and plant diversity of temperate North American wetlands. Ecology 80: 2151-2169.

Beerling DJ & Perrins JM (1993) Biological flora of the British Isles. *Impatiens glandulifera* Royle (*Impatiens roylei* Walp.). Journal of Ecology 81: 367-382.

Bélanger L & Bédard J (1994) Role of ice scouring and goose grubbing in marsh plant dynamics. Journal of Ecology 82: 437-445.

Bell M (2000) Intertidal peats and the archaeology of coastal change in the Severn Estuary, Bristol Channel and Pembrokeshire. In: Pye K & Allen JRL (eds) Coastal and estuarine environments: sedimentology, geomorphology and geoarchaeology. Special Publications 175: 377-392. Geological Society, London.

Below H (2006) Das Naturschutzgebiet Heuckenlock und seine Vegetation: Süsswasser-Gezeitenbereich der Elbe (Nachexkursion). In: Härdtle W, Horst K & Prüter J (eds) Jahrbuch des Naturwissenschaftlichen Vereins für das Fürstentum Lüneburg von 1851 e.v.: Flora und Vegetation im Nordöstlichen Niedersachsen, pp. 159-166. GER.

Bendire C (1895) Life histories of North American birds, from the parrots to the grackles, with special reference to their breeding habits and eggs. Smithsonian Contributions to Knowledge 32 (985), Washington, DC.

Benjamin E (1998) Squatter Shangri-La: Hudson River sites longtime vacation spots for campers without ownership. Times Union [Albany, New York] (3 October): D1, D5. USA.

Benoit LK & Askins RA (1999) Impact of the spread of *Phragmites* on the distribution of birds in Connecticut tidal marshes. Wetlands 19: 194-208.

Bent AC (1963) Life histories of North American marsh birds. Dover Publications, New York. (Originally published 1926 as U.S. National Museum Bulletin 135).

Berger J & Sinton JW (1985) Water, earth, and fire: land use and environmental planning in the New Jersey Pine Barrens. Johns Hopkins University Press, Baltimore, MD, USA.

Berggren TJ & Lieberman JT (1977) Relative contributions of Hudson, Chesapeake and Roanoke striped bass, *Morone saxatilis*, to the Atlantic coast fishery. Fisheries Bulletin 76: 335-345.

Bertness MD, Ewanchuk PJ & Silliman BR (2002) Anthropogenic modification of New England salt marsh landscapes. Proceedings of the National Academy of Sciences 99: 1395-1398.

Bevington AE (2007) Environmental factors and *Typha* spp. dominance in created wetlands. MS Thesis, College of William and Mary, Virginia Institute of Marine Science. Gloucester Point, VA, USA.

Bianchi TS (2007) Biogeochemistry of estuaries. Oxford University Press, New York.

Bildstein KL, Post W, Johnston J & Frederick P (1990) Freshwater wetlands, rainfall, and the breeding ecology of white ibises in coastal South Carolina. Wilson Bulletin 102: 84-98.

Billen G & Garnier J (1997) The Phison River plume: coastal eutrophication in response to changes in land use and water management in the watershed. Aquatic Microbial Ecology 13: 3-17.

Billen G, Garnier J, Ficht A & Cun C (2001) Modeling the response of water quality in the Seine river estuary to human activity in its watershed over the last 50 years. Estuaries 24: 977–993.

Billen G, Garnier J & Rousseau V (2005) Nutrient fluxes and water quality in the drainage network of the Scheldt basin over the last 50 years. Hydrobiologia 540: 47-67.

Birch JB & Cooley JL (1982) Production and standing crop patterns of giant cutgrass (*Zizaniopsis miliacea*). Oecologia 52: 230-235.

Blagden T Jr (1992) South Carolina's wetland wilderness: the ACE Basin. Westcliffe Publishers, Englewood, CO, USA.

Blom EAT (1996) King Rail. In: Robbins C (ed) Atlas of the Breeding Birds of Maryland and the District of Columbia, pp. 126. University of Pittsburgh Press, Pittsburgh, PA, USA.

Blossey B, Schroeder D, Hight SD & Malecki RA (1994) Host specificity and environmental impact of two leaf beetles (*Galerucella calmariensis* and *G. pusilla*) for biological control of purple loosestrife (*Lythrum salicaria*). Weed Science 42: 134-140.

Blum LK & Christian RR (2004) Belowground production and decomposition along a tidal gradient in a Virginia salt marsh. In: Faghrazzi S, Marani M & Blum LK (eds) Ecogeomorphology of tidal marshes, pp. 47-74. Coastal and Estuarine Studies 59. American Geophysical Union, Washington, DC.

Blum MD & Tornqvist TE (2000) Fluvial responses to climate and sea-level change: a review and look forward. Sedimentology 47: 2-48.

Bobbink R, Beltman B, Verhoeven JTA & Whigham DF (eds) (2008) Wetlands: functioning, biodiversity conservation, and restoration. Springer-Verlag, Berlin.

Boesveld A (2003) Het getijdeslakje (*Mercuria confusa*) in de Sliedrechtse en Dordtse Biesbosch. Rapport Staatsbosbeheer District De Biesbosch, Werkendam, NL.

Bonis A, Lepart J & Grillas P (1995) Seed bank dynamics and coexistence of annual macrophytes in a temporary and variable habitat. Oikos 74: 81-92.

Booth PM (1989) Nitrogen and phosphorus cycling strategies in two tidal freshwater macrophytes, *Peltandra virginica* and *Spartina cynosuroides*. PhD Dissertation, The College of William and Mary. Gloucester Point, VA, USA.

Borawa JC, Kerby JH, Huish MT & Mullis AW (1979) Currituck Sound fish populations before and after infestation by Eurasian water-milfoil. Proceedings of the Annual Conference of the Southeastern Association of Fish and Wildlife Agencies 32: 520-528. USA.

Bordentown Historical Society (1977) Bordentown 1682-1976. Bordentown Historical Society, Bordentown, NJ, USA.

Boreman J & Klauda RJ (1988) Distribution of early life stages of striped bass in the Hudson River Estuary, 1974-1979. American Fisheries Society Monograph 4: 53-58.

Borum J & Sand-Jensen K (1996) Is total primary production in shallow coastal marine waters stimulated by nitrogen loading? Oikos 76: 406–410.

Bos MG, Repogle JA & Clemmens AJ (1984) Flow measurements flumes for open ditch systems. John Wiley, New York.

Boshart W (2003) BA-04 West Pointe a la Hache siphon construction summary data and graphics. Coastal Restoration Division, Louisiana Department of Natural Resources, Baton Rouge, LA, USA. Accessed from http://lacoast.gov.

Boudewijn TJ, Veen SM, De Boer EJF & Van der Rijt CWCJ (2001) Getij in de Crezéepolder – Een modellenstudie voor mogelijke natuurontwikkeling. Rapport 01-100. Bureau Waardenburg, Culemborg, NL.

Boudewijn TJ, Van Dam EM & De Ridder RP (2004) Sliedrechtse Biesbosch op de schop! De Levende Natuur 105: 87-92. NL.

Bouezmarni M & Wollast R (2005) Geochemical composition of sediments in the Scheldt estuary with emphasis on trace metals. Hydrobiologia 540: 155-168.

Boule ME (1981) Tidal wetlands of the Puget Sound region, Washington USA. Wetlands 1: 47-60.

Bouma S, Veen SM & Bonhof GH (2002) Proefgebieden herstel zoet-zout overgangen in het Deltagebied. Rapport 02-158. Bureau Waardenburg, Culemborg, NL.

Boumans RMJ & Day JW Jr (1993) High precision measurements of sediment elevation in shallow coastal areas using a sedimentation-erosion table. Estuaries 16: 375-38.

Bowden WB (1984a) Nitrogen and phosphorus in the sediments of a tidal, freshwater marsh in Massachusetts. Estuaries 7: 108-118.

Bowden WB (1984b) A nitrogen-15 isotope dilution study of ammonium production and consumption in a marsh sediment. Limnology and Oceanography 29: 1004-1015.

Bowden WB (1986) Nitrification, nitrate reduction, and nitrogen immobilization in a tidal freshwater marsh sediment. Ecology 67: 88-99.

Bowden WB (1987) The biogeochemistry of nitrogen in freshwater wetlands. Biogeochemistry 4: 313-348.

Bowden WB, Vörösmarty CJ, Morris JT, Peterson BJ, Hobbie JE, Steudler PA & Moore B (1991) Transport and processing of nitrogen in a tidal freshwater wetland. Water Resources Research 27: 389-408.

Bowers JK (1995) Innovations in tidal marsh restoration: the Kenilworth Marsh account. Restoration and Management Notes 13: 155-161. USA.

Boyle RH (1969) The Hudson River: a natural and unnatural history. W.W. Norton Co., New York.

Boynton WR, Setzler EM, Wood KV, Zion HH, Homer M & Mihursky JA (1977) Potomac River fisheries program, ichthyoplankton and juvenile investigations, 1976, draft report, reference No 77-169 Chesapeake Biological Laboratory. Prepared for Power Plant Siting Program, Maryland Department of Natural Resources by University of Maryland, Center for Environmental and Estuarine Studies, Chesapeake Biological Laboratory, Solomons, MD, USA.

Boynton WR, Polgar TT & Zion HH (1981) Importance of juvenile striped bass food habitat in the Potomac Estuary. Transactions of the American Fisheries Society 110: 56-63.

Brandt R (1937) Verzeichnis der Weichtiere der Hamburgischen Umgebung. Verhandlungen des Vereins für naturwissenschaftliche Heimatforschung zu Hamburg 26: 71-84. GER.

Brasse S, Nellen M, Seifert R & Michaelis W (2002) The carbon dioxide system in the Elbe estuary. Biogeochemistry 59: 25-40.

Bratton JH (ed) (1991) British Red Data Books (3) – Invertebrates other than insects. Joint Nature Conservation Committee, Peterborough, UK.

Breine JJ, Maes J, Quataert P, Van den Bergh E, Simoens I, Van Thuyne G & Belpaire C (2007) A fish-based assessment tool for the ecological quality of the brackish Schelde estuaria in Flanders (Belgium). Hydrobiologia 575: 141-159.

Brinkkemper O & De Ridder T (2001) Het archeobotanisch onderzoek - VLAK-verslag 2.3; Hoogstad 5.019. Vlaardingen, NL. (available at www.archeologie.vlaardingen.nl)

Brinkkemper O, Weeda EJ, Bohncke SJP & Kuijper WJ (2008) The past and present occurrence of *Elatine* and implications for palaeoenvironmental reconstructions. Vegetation History and Archaeobotany 17: 15-24.

Brinson MM, Lugo AE & Brown S (1981) Primary productivity, decomposition and consumer activity in freshwater wetlands. Annual Review of Ecology and Systematics 12: 123-161.

Brinson MM, Christian RR & Blum LK (1995) Multiple stages in the sea-level induced transition from terrestrial forest to estuary. Estuaries 18: 648-659.

Brion N, Billen G, Guezennec L & Ficht A (2000) Distribution of nitrifying activity in the Seine River (France) from Paris to the estuary. Estuaries 23: 669-682.

Brittingham KD & Hammerschlag RS (2006) Final Report (2002-2004): benthic macroinvertebrate communities of reconstructed freshwater tidal wetlands in the Anacostia River, Washington, DC. U.S. Geological Survey Patuxent Wildlife Research Center, Beltsville, MD, USA. Accessed from http://www.pwrc.usgs.gov/resshow/hammerschlag/anacostia.cfm.

Bromberg KD & Bertness MD (2005) Reconstructing New England salt marsh losses using historical maps. Estuaries 28: 823-832.

Bronsdon RK & Naden PS (2000) Suspended sediment in the Rivers Tweed and Teviot. The Science of the Total Environment 252: 95-113.

Brown CA (1936) The vegetation of the Indian mounds, middens, and marshes in Plaquemines and St. Bernard Parishes. Louisiana Geological Survey, Geological Bulletin 8: 423-440. USA.

Brown KJ & Pasternack GB (2004) The geomorphic dynamics of an upper deltaic floodplain tract in the Sacramento-San Joaquin Delta, California, USA. Earth Surface Processes and Landforms 29: 1235-1258.

Brown KJ & Pasternack GB (2005) A paleoenvironmental reconstruction to aid in the restoration of floodplain and wetland habitats on an upper deltaic plain, California, USA. Environmental Conservation 32: 1-14.

Brumbach HJ & Bender S (2002) Woodland period settlement and subsistence change in the upper Hudson River Valley. In: Hart JP & Rieth CR (eds) Northeast subsistence-settlement change A.D. 700-1300. New York State Museum Bulletin 496: 227-239. USA.

Brunet RC & Garcia-Gil LJ (1996) Sulfide-induced dissimilatory nitrate reduction to ammonia in anaerobic freshwater sediments. FEMS Microbiology Ecology 21: 131-138.

Bruyndoncx L, Jordaens K & Meire P (2001) De weekdieren van de schorren van het Schelde-estuarium. De Levende Natuur 102: 70. NL.

Bruyndoncx L, Jordaens K, Ysebaert T, Meire P & Backeljau T (2002) Molluscan diversity in tidal marshes along the Scheldt estuary (The Netherlands, Belgium). Hydrobiologia 474: 189-196.

Brys R, Ysebaert T, Escaravage V, Van Damme S, Van Braeckel A, Vandevoorde B & Van den Bergh E (2005) Afstemmen van referentiecondities en evaluatiesystemen in functie van de KRW: afleiden en beschrijven van typespecifieke referentieomstandigheden en/of MEP in elk Vlaams

overgangswatertype vanuit de – overeenkomstig de KRW – ontwikkelde beoordelingssystemen voor biologische kwaliteitselementen. Report IN.O. 2005.7, Instituut voor Natuurbehoud, Brussels, BEL.

Buchanan C, Lacouture RV, Marshall HG, Olson M & Johnson JM (2005) Phytoplankton reference communities for Chesapeake Bay and its tidal tributaries. Estuaries 28: 138-159.

Bunt JS, Williams WT & Clay HJ (1982) River water salinity and the distribution of mangrove species along several rivers in North Queensland. Australian Journal of Botany 30: 401-412.

Burchard H & Baumert H (1998) The formation of estuarine turbidity maxima due to density effects in the salt wedge. A hydrodynamic process study. Journal of Physical Oceanography 28: 309-321.

Burg ME, Tripp DR & Rosenberg ES (1980) Plant associations and primary productivity of the Nisqually salt marsh on Southern Puget Sound, Washington. Northwest Science 54: 222-236. USA.

Burger J, Howe MA, Hahn DC & Chase J (1977) Effects of tide cycles on habitat selection and habitat partitioning by migrant shorebirds. Auk 94: 743-758. USA.

Burger MF & Liner JM (2005) Important bird areas of New York: habitats worth protecting. Audubon New York, Albany, NY, USA.

Burkart M (2001) River corridor plants (Stromtalpflanzen) in central European lowland: a review of a poorly understood plant distribution pattern. Global Ecology and Biogeography 10: 449-468.

Burke JD, Weis JS & Weis P (2000) Release of metals by the leaves of the salt marsh grasses *Spartina alterniflora* and *Phragmites australis*. Estuarine, Coastal and Shelf Science 51: 153-159.

Burns MG (1997) The Goat Island campsite, Tivoli Bays, Hudson River: potential for environmental information from a heavily looted archaeological site. MS Thesis, Bard College, Annandale, NY, USA.

Burroughs F (2006) Confluence: Merrymeeting Bay. Tilbury House Publishers, Gardiner, ME, USA.

Burt W (1994) Shadow birds: a quest for rails. Lyons & Burford, New York.

Byrd GV & Ronsse D (1983) Preliminary classification of plant communities in the vegetated intertidal zone of the central Yukon Delta, Alaska. Unpubl. manuscript on file with: U.S. Fish and Wildlife Service, Anchorage, AK, USA.

Byrne P, Borengasser M, Drew G, Muller R, Smith BL Jr & Wax C (1976) Barataria Basin: hydrologic and climatologic processes. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA, USA.

Cahoon DR (1982) Community production and biomass allocation of *Hibiscus moscheutos* L. (Malvacaeae), a brackish marsh dominant. PhD Dissertation. University of Maryland, College Park, MD, USA.

Cahoon DR, Reed DJ & Day JW Jr (1995) Estimating shallow subsidence in microtidal salt marshes of the southeastern United States: Kaye and Barghoorn revisited. Marine Geology 128: 1-9.

Cahoon DR, Lynch JC, Hensel P, Boumans R, Perez BC, Segura B & Day JW (2002) High-precision measurements of wetland sediment elevation: I. Recent improvements to the sedimentation-erosion table. Journal of Sedimentary Research 72: 730-733.

Caldwell FA & Crow GE (1992) A floristic and vegetation analysis of a freshwater tidal marsh on the Merrimack River, West Newbury, Massachusetts. Rhodora 94: 63-97. USA.

Callaway JC (2004) Restoring our national wetlands. In: Spray SL & Mcglothlin KL (eds) Wetlands (Exploring environmental challenges, a multidisciplinary approach), pp. 55-83. Rowman & Littlefield Publishers, Inc., Lanham, MD, USA.

Callaway JC, Sullivan G & Zedler JB (2003) Species-rich plantings increase biomass and nitrogen accumulation in a wetland restoration experiment. Ecological Applications 13: 1626-1639.

Callender E (1982) Benthic phosphorus regeneration in the Potomac River estuary. Hydrobiologia 92: 431-446.

Callender E & Hammond DE (1982) Nutrient exchange across the sediment-water interface in the Potomac River estuary. Estuarine, Coastal and Shelf Science 15: 395-413.

Campbell R, Rosell F, Nolet BA & Dijkstra VAA (2005) Territory and group sizes in Eurasian beavers (*Castor fiber*): echoes of settlement and reproduction? Behavioral Ecology and Sociobiology 58: 597-607.

Canavan RW, Laverman AM & Slomp CP (2007a) Modeling nitrogen cycling in a coastal fresh water sediment. Hydrobiologia 584: 27-36.

Canavan RW, Van Capellen P, Zwolsman JJG, Van den Berg GA & Slomp CP (2007b) Geochemistry of trace metals in a fresh water sediment: field results and diagenetic modelling. The Science of the Total Environment 381: 263-279.

Capers RS (2003a) Macrophyte colonization in a freshwater tidal wetland (Lyme, CT, USA). Aquatic Botany 77: 325-338.

Capers RS (2003b) Six years of submerged plant community dynamics in a freshwater tidal wetland. Freshwater Biology 48: 1640-1651.

Caraco NF, Cole JJ & Likens GE (1989) Evidence for sulphate-controlled phosphorus release from sediments of aquatic systems. Nature 341: 395-413.

Caraco NF, Cole JJ, Likens GE, Lovett GM & Weathers KC (2003) Variation in NO_3 export from flowing waters of vastly different sizes: does one model fit all? Ecosystems 6: 344-352.

Carney JA (2001) Black rice: The African origins of rice cultivation in the Americas. Harvard University Press, Cambridge, MA, USA.

Carpenter K, Sasser CE, Visser JM & DeLaune RD (2007) Sediment input into a floating freshwater marsh: effects on soil properties, buoyancy and plant biomass. Wetlands 27: 1016-1024.

Carson MA & Kirkby MJ (1972) Hillslope form and process. Cambridge University Press, New York.

Carstensen R (2004) GIS mapping for Mendenhall Wetland State Game Refuge: vegetation types, tidal elevations, property boundaries, and their relation to glacial rebound and the conservation of accreted land. Discovery Southeast for the Southeast Alaska Land Trust, Juneau, AK, USA.

Caspers H (1948) Ökologische Untersuchungen über die Wattentierwelt im Elbe-Ästuar. Verhandlungen der deutschen Zoologischen Gesellschaft (Kiel, 1948): 350-359. GER.

Cauboue M (1972) Étude écologique des forêts ripariennes du Saint-Laurent aux environs de Québec, Thèse de maîtrise, Université Laval, Sainte-Foy, Canada.

Cebrian J & Lartigue J (2004) Patterns of herbivory and decomposition in aquatic and terrestrial ecosystems. Ecological Monographs 74: 237-259.

Center for Aquatic and Invasive Plants (University of Florida) (2001) *Cyperus difformis*. (Viewed 29 July 2006 at http://aquat1.ifas.ufl.edu/cypdif.html).

Chabreck RH (1970) Marsh zones and vegetative types in the Louisiana coastal marshes. PhD Dissertation, Louisiana State University, Baton Rouge, LA, USA.

Chabreck RH (1972) Vegetation, water and soil characteristics of the Louisiana coastal region. Louisiana Agricultural Experiment Station Bulletin 664: 1-72. Baton Rouge, LA, USA.

Chabreck RH & Palmisano AW (1973) The effects of Hurricane Camille on the marshes of the Mississippi River Delta. Ecology 54: 1118-1123.

Chabrerie O, Poudevigne I, Bureau F, Vinceslas-Akpa M, Nebbache S, Aubert M, Boarder A & Alard D (2001) Biodiversity and ecosystem functions in wetlands: a case study in the estuary of the Seine river, France. Estuaries 24: 1088-1096.

Chambers RM & Fourqurean JW (1991) Alternative criteria for assessing nutrient limitation of a wetland macrophyte (*Peltandra virginica* (L.) Kunth). Aquatic Botany 40: 305-320.

Chambers RM & Odum WE (1990) Porewater oxidation, dissolved phosphate and the iron curtain: iron-phosphorous relations in tidal freshwater marshes. Biogeochemistry 10: 37-52.

Chambers RM, Meyerson LA & Slatonstall K (1999) Expansion of *Phragmites australis* into tidal wetlands of North America. Aquatic Botany 64: 261-273.

Chambers RM, Osgood DT, Bart DJ & Montalo F (2003) *Phragmites australis* invasion and expansion in tidal wetlands: interactions among salinity, sulfide, and hydrology. Estuaries 26: 398-406.

Chang M, Kennen JG & Corso ED (2005) Evaluating temporal changes in stream condition in three New Jersey river basins by using an index of biotic integrity. Bulletin New Jersey Academy of Science 45: 1-12. USA.

Chen M, Wartel S, Van Eck GTM & Van Maldegem DC (2005) Suspended matter in the Scheldt estuary. Hydrobiologia 540: 79-104.

Chesapeake Bay National Estuarine Research Reserve - Maryland (2004) Bird Checklist of the Patuxent River – Jug Bay Area. Maryland Department of Natural Resources, Annapolis, MD, USA.

Childers DL & Day Jr JW (1988) A flow-through flume technique for quantifying nutrient and materials fluxes in microtidal estuaries. Estuarine, Coastal and Shelf Science 27: 483-494.

Childers DL, Sklar FH, Drake B & Jordan T (1993) Seasonal measurements of sediment elevation in three mid-Atlantic estuaries. Journal of Coastal Research 9: 986-1003.

Childers DL, Day JW & McKellar HN (2000) Twenty more years of marsh and estuarine flux studies: revisiting Nixon (1980). In: Weinstein MP & Kreeger DA (eds) Concepts and Controversies in Tidal Marsh Ecology, pp. 391-424. Kluwer Academic Publishers, Boston, MA, USA.

Chilton ES (1991) The Goat Island rockshelter: new light from old legacies. MS Thesis, University of Massachusetts, Amherst, MA, USA.

Christensen JH, Hewitson B, Busuioc A, Chen A, Gao X, Held I, Jones R, Kolli RK, Kwon W-T, Laprise R, Magaña Rueda V, Mearns L, Menéndez CG, Räisänen J, Rinke A, Sarr A & Whetton P (2007) Regional climate projections. In: Solomon S, Qin D, Manning M, Chen Z, Marquis M, Averyt KB, Tignor M & Miller HL (eds) Climate change 2007: the physical science basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, pp. 847-940. Cambridge University Press, Cambridge, UK, and New York.

Christmas JF, Bohn RE & Webster DW (1994) Preliminary assessment of the potential for zebra mussel infestation in Maryland. In: Maryland Sea Grant, Zebra Mussels and the Mid-Atlantic: reports from the Sea Grant Programs of New Jersey, Delaware, Maryland, Virginia, and North Carolina, pp. 41-54. College Park, MD, USA.

Christy JA & Putera JA (1992) Lower Columbia River Natural Area Inventory. Report to the Nature Conservancy. Washington Field Office, Seattle, WA, USA.

Clevering OA (1995) Germination and seedling emergence of *Scirpus lacustris* L. and *Scirpus maritimus* L. with special reference to the restoration of wetlands. Aquatic Botany 50: 63-78.

Clevering OA, Blom CWPM & Van Vierssen W (1996) Growth and morphology of *Scirpus lacustris* and *S. maritimus* seedlings as affected by water level and light availability. Functional Ecology 10: 289-296.

Cleveringa P, Hendriks JPCA, Van Beurden A, Weerts HTJ, Van Smeerdijk DG, Meijer T, De Wolf H & Paalman DBS (2004) "So grot overvlot der watere…" - Een bijdrage aan het moderne interdisciplinaire onderzoek naar de St Elisabethsvloed en de periode die daaraan vooraf ging. Historische Tijdschrift 36: 163-180. NL

Cloern JE (1987) Turbidity as a control on phytoplankton biomass and productivity in estuaries. Continental Shelf Research 5: 1367-1381.

Cloern JE (2001) Our evolving conceptual model of the coastal eutrophication problem. Marine Ecology Progress Series 210: 223–253.

CNPS (California Native Plant Society) (2001) Inventory of Rare and Endangered Plants of California, California Native Plant Society, Sacramento, CA, USA.

Coen I (1988) Ontstaan en ontwikkeling van de Westerschelde (with summary). Water 43: 156-162. BEL.

Cohen AN & Carlson JT (1998) Accelerating invasion rate in a highly invaded estuary. Science 279: 555-558.

Cohen MR & Poisz HKJ (ed) (2005) Forty years of maritime solutions that changed the world. Terra et Aqua nr. 100 (IADC) Sept. 2005. The Hague, NL.

Cole JJ & Caraco NF (2006) Primary production and its regulation in the tidal-freshwater Hudson River. In: Levinton JS & Waldman JR (eds) The Hudson River estuary, pp. 107-120. Cambridge University Press, Boston, MA, USA.

Cole JJ, Caraco NF & Peierls BL (1992) Can phytoplankton maintain a positive carbon balance in a turbid, fresh-water, tidal estuary? Limnology and Oceanography 37: 1608-1617.

Colijn F, Admiraal W, Baretta WJ & Ruardij P (1987) Primary production in a turbid estuary, the Ems-Dollard - Field and model studies. Continental Shelf Research 7: 1405-1409.

Conley DJ (2002) Terrestrial ecosystems and the global biogeochemical silica cycle. Global Biogeochemical Cycles 16: 1121.

Connecticut Department of Environmental Protection (2004) Connecticut River estuary and tidal wetlands complex (Viewed 30 July 2006 at http://dep.state.ct.us/olisp/ramsar/changes.htm).

Conner WH & Day JW Jr (1976) Productivity and composition of a baldcypress-water tupelo site and a bottomland hardwood site in a Louisiana swamp. American Journal of Botany 63: 1354-1364.

Conner WH, Gosselink JG & Parrondo RT (1981) Comparison of the vegetation of three Louisiana swamp sites with different flooding regimes. American Journal of Botany 68: 320-331.

Conner WH, McLeod KW & McCarron JK (1997) Flooding and salinity effects on growth and survival of four common forested wetland species. Wetlands Ecology and Management 5: 99-109.

Conner WH, Inabinette LW & Ozalp M (2004) Growth and survival of baldcypress planted in an old rice field of coastal South Carolina. In: Connor KF (ed) Proceedings of the 12th Biennial Southern Silvicultural Research Conference, General Technical Report SRS-71, pp. 578-580. U.S. Department of Agriculture, Forest Service, Southern Research Station, Asheville, NC, USA.

Conner WH, Doyle TW, Krauss KW (eds) (2007) Ecology of tidal freshwater forested wetlands of the Southeastern United States. Springer, Dordrecht, NL.

Connors LM, Kiviat E, Groffman PM & Ostfeld RS (2000) Muskrat (*Ondatra zibethicus*) disturbance to vegetation and potential net nitrogen mineralization and nitrification rates in a freshwater tidal marsh. American Midland Naturalist 143: 53-63.

Connover MR & Kania GS (1994) Impact of interspecific aggression and herbivory by Mute Swans on native waterfowl and aquatic vegetation in New England. Auk 111: 744-748. USA.

Conomos TJ (1979) Properties and circulation of San Francisco Bay waters. In: Conomos TJ (ed) San Francisco Bay: the urbanized estuary, pp. 47-84. Pacific Division, AAAS, California Academy of Science, San Francisco, CA, USA.

Conomos TJ, Smith RE & Gartner JW (1985) Environmental setting of San Francisco Bay. Hydrobiologia 129: 1-12.

Constantine JA, Pasternack GB & Johnson ML (2003) Floodplain evolution in a small, tectonically active basin of Northern California. Earth Surface Processes and Landforms 28: 869-888.

Cooper SR (1995) Chesapeake Bay watershed historical land use: impact on water quality and diatom communities. Ecological Applications 5: 703-723.

Cooper SR & Brush GS (1993) A 2,500-year history of anoxia and eutrophication in Chesapeake Bay. Estuaries 16: 617-626.

Coops H & Smit H (1988) Biezen langs de Oude Maas. De Levende Natuur 89: 106-110. NL

Coops H, Geilen N & Van der Velde G (1999) Helophyte zonation in two regulated estuarine areas in the Netherlands: vegetation analysis and relationship with hydrological factors. Estuaries 22: 657-668.

Core EL (1941) *Butomus umbellatus* in America. Ohio Journal of Science 41: 79-85. USA.

Cornu CE & Sadro S (2002) Physical and functional responses to experimental marsh surface elevation manipulation in Coos Bay's South Slough. Restoration Ecology 10: 474-486.

Costanza R, d'Arge R, de Groot R, Farber S, Gasso M, Hannon B, Limburg K, Naeem S, O'Neill RV, Paruelo J, Raskin RG, Sutton P & Van den Belt M (1997) The value of the world's ecosystem services and natural capital. Nature 387: 253-260.

Couillard L & Grandin P (1986) La végétation des milieux humides du Québec. Les Publications du Québec, Québec, Canada.

Counts CL III (1986) The zoogeography and history of the invasion of the United States by *Corbicula fluminea* (Bivalvia: Corbiculidae). American Malacological Bulletin, Special Edition 2: 7-39.

Cowardin LM, Carter V, Golet FC & LaRoe ET (1979) Classification of wetlands and deepwater habitats of the United States. FWS/OBS-79/31. U.S. Fish and Wildlife Service, Washington, DC.

Cox T (2008) Oxygen and planktonic primary production in the freshwater tidal reaches of the Schelde estuary. PhD Dissertation, University of Antwerp, BEL.

Cox T, Maris T, De Vleeschauwer P, De Mulder T, Soetaert K & Meire P (2006) Flood control areas as an opportunity to restore estuarine habitat. Ecological Engineering 28: 55-63.

CPSL (2001) Final report of the Trilateral Working Group on Coastal Protection and Sea Level Rise. Wadden Sea Ecosystem No. 13. Common Wadden Sea Secretariat, Wilhelmshaven, GER.

Craft C (2007) Freshwater input structures soil properties, vertical accretion, and nutrient accumulation of Georgia and U.S. tidal marshes. Limnology and Oceanography 52: 1220-1230.

Craft CB & Richardson CJ (1993) Peat accretion, nutrient accumulation, and phosphorus storage efficiency along a eutrophication gradient in the northern Everglades. Biogeochemistry 22: 133-156.

Craft C, Megonigal P, Broome S, Stevenson J, Freese R, Cornell J, Zheng L & Sacco J (2003) The pace of ecosystem development of constructed *Spartina alterniflora* marshes. Ecological Applications 13: 1417-1432.

Craft C, Clough J, Ehman J, Joye S, Park R, Pennings S, Guo S & Machmuller M (2009) Forecasting the effects of accelerated sea level rise on tidal marsh ecosystem services. Frontiers in Ecology and the Environment 7: 73-78.

Crain CM (2007) Shifting nutrient limitation and eutrophication effects in marsh vegetation across estuarine salinity gradients. Estuaries and Coasts 30: 26-34.

Crain CM (2008) Interactions between marsh plant species vary in direction and strength depending on environmental and consumer context. Journal of Ecology 96: 166-173.

Crain CM & Bertness MD (2005) Community impacts of a tussock-forming sedge: is ecosystem engineering important in physically benign habitats? Ecology 86: 2695-2704.

Crain CM, Silliman BR, Bertness SL & Bertness MD (2004) Physical and biotic drivers of plant distribution across estuarine salinity gradients. Ecology 85: 2539-2549.

CRCL (The Coalition to Restore Coastal Louisiana) (1999) No time to lose: facing the future of Louisiana and the crisis of coastal land loss. Baton Rouge, LA, USA.

Creed RP & Sheldon SP (1995) Weevils and watermilfoil: did a North American herbivore cause the decline of an exotic plant? Ecological Applications 5: 1113-1121.

CREST (2006) Columbia River estuary wetland restoration and monitoring findings report. Columbia River Estuary Study Taskforce, Astoria, Oregon, USA. Accessed from http://www.columbiaestuary.org.

Criel B, Muylaert W, Hoffmann M, De Loose L & Meire P (1999) Vegetatiemodellering van de buitendijkse gebieden langs de Zeeschelde. Rapport Onderzoek Milieu-effecten Sigmaplan (OMES), AMIS DS7.2, deelstudie 8. Gent / Brussel, BEL.

Crivelli AJ (1983) The destruction of aquatic vegetation by carp. Hydrobiologia 106: 37-41.

Cronk JK & Fennessy MS (2001) Wetland plants: biology and ecology. Lewis Publishers, Washington, DC.

Crooks S, Schutten J, Sheern GD, Pye K & Davy AJ (2002) Drainage and elevation as factors in the restoration of salt marsh in Britain. Restoration Ecology 10: 591-602.

Crow JH (1968) Plant ecology of the Copper River delta, Alaska. PhD Dissertation, Washington State University, Pullman, WA, USA.

Crumb SE (1977) Macrobenthos of the tidal Delaware River between Trenton and Burlington, New Jersey. Chesapeake Science 18: 253-265. USA.

Crumrine P (1997) The effects of tides on the feeding patterns of the mummichog (*Fundulus heteroclitus*) in a freshwater tidal wetland. Technical Report of the Jug Bay Wetlands Sanctuary, Lothian, Maryland. MD, USA.

Cugier P, Billen G, Guillaud JF, Garnier J & Ménesguen A (2005) Modelling the eutrophication of the Seine Bight (France) under historical, present and future riverine nutrient loading. Journal of Hydrology 304: 381-396.

Currin CA & Pearl HW (1998) Epiphytic nitrogen fixation associated with standing dead shoots of smooth cordgrass, *Spartina alterniflora*. Estuaries 21: 108-117.

Curtis PS, Drake BG, Leadley PW, Arp W & Whigham DF (1989) Growth and senescence of plant communities exposed to elevated CO_2 concentrations on an estuarine marsh. Oecologia 78: 20-26.

Cypert E (1972) The origin of houses in the Okefenokee Prairies. American Midland Naturalist 87: 448-458.

CZR Inc. (1999) Location of permanent stations, background stations, and substations for monitoring potential effects of increased tidal range on the Cape Fear River ecosystem due to deepening Wilmington harbor, North Carolina. Report prepared for the U.S. Army Corps of Engineers, Wilmington District, Wilmington, NC, USA.

Dahl F (1891) Untersuchungen über die Tierwelt der Unterelbe. Sechster Bericht der Kommission zur wissenschaft-lichen Untersuchung der deutschen Meere in Kiel für die Jahre 1887 bis 1891, 17-21: 150-185. Kiel, GER.

Dahl TE (2000) Status and trends of wetlands in the conterminous United States 1986 to 1997. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC.

Dahl TE (2006) Status and trends of wetlands in the conterminous United States 1998 to 2004. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC.

Dahl TE & Johnson CE (1991) Status and trends of wetlands in the conterminous United States, mid-1970s to mid-1980s. U.S. Fish and Wildlife Service, Washington, DC.

Dalrymple RW, Zaitlin BA, & Boyd R (1992) Estuarine Facies models: conceptual basis and stratiagraphic implications. Journal of Sedimentary Petrology 62: 1130-1146.

Dame RF (1996) Ecology of marine bivalves: an ecosystem approach. CRC Press, Boca Raton, FL, USA.

Daniel P (1986) Breaking the land: the transformation of cotton, tobacco, and rice cultures since 1880. University of Illinois Press, Urbana, IL, USA.

D'Antonio C & Meyerson LA (2002) Exotic plant species as problems and solutions in ecological restoration: a synthesis. Restoration Ecology 10: 703-713.

Darke AK & Megonigal JP (2003) Control of sediment deposition rates in two mid-Atlantic Coast tidal freshwater wetlands. Estuarine, Coastal and Shelf Science 57: 255-268.

Darst MR, Light HM & Lewis LJ (2002) Ground-cover vegetation in wetland forests of the Lower Suwannee River floodplain, Florida, and potential impacts of flow reductions. Water Resources Investigations Report 02-4027, U.S. Geological Survey, Tallahassee, FL, USA.

Dauvin J-C & Desroy N (2005) The food web in the lower part of the Seine estuary: a synthesis of existing knowledge. Hydrobiologia 540: 13-27.

Davidson NC, d'A Laffoley D, Doody JP, Way LS, Gordon J, Key R, Drake CM, Pienkowski MW, Mitchell R & Duff KL (1991) Nature conservation and estuaries of Great Britain. Nature Conservancy Council, Peterborough, UK.

Davies SB (2004) Vegetation dynamics of a tidal freshwater marsh: long-term and inter-annual variability and their relation to salinity. MS Thesis, College of William and Mary, Virginia Institute of Marine Science. Gloucester Point, VA, USA.

Davis WM (1909). The geographical cycle. In: Johnson DW (ed) Geographical Essays, pp. 249-279. Ginn and Company, Boston, MA, USA.

Day JW Jr, Barras J, Clairain E, Johnston J, Justic D, Kemp GP, Ko J-Y, Lane R, Mitsch WJ, Steyer G, Templet P & Yañez-Arancibia A (2005) Implications of global climatic change and energy cost and availability for the restoration of the Mississippi delta. In: Mitsch WJ (ed) Wetland Creation, Restoration and Conservation, pp. 253-265. Elsevier, Amsterdam.

Day JW Jr, Boesch DF, Clairain EJ, Kemp GP, Laska SB, Mitsch WJ, Orth K, Mashriqui H, Reed DJ, Shabman L, Simenstad CA, Streever BJ, Twilley RR, Watson CC, Wells JT & Whigham DF (2007) Restoration of the Mississippi Delta: lessons from Hurricanes Katrina and Rita. Science 315: 1679-1684.

De Boois H (1982) Veranderingen in het milieu en de vegetatie in de Biesbosch door de afsluiting van het Haringvliet. PhD Dissertation, Wageningen Agricultural University, NL.

De Groot SJ (1990) The former allis and twaite shad fisheries of the lower Rhine in the Netherlands. Journal of Applied Ichthyology 6: 252-256.

De Groot SJ (1992) Herstel van trekvissen in de Rijn een realiteit? 8. De Fint. De Levende Natuur 93: 182-186. NL.

De Groot SJ (2002) A review of the past and present status of anadromous fish species in the Netherlands: is restocking the Rhine feasible? Hydrobiologia 478: 205-218.

De Jong JW & Everts FH (1995) De vegetatie-ontwikkeling van de Biesbosch 1984-1995. Rapport Everts & de Vries Oecologisch adviesbureau, Groningen, NL.

De Lange MC & Vriese FT (2006) Visstandbemostering Benedenrivierengebied 2006. Rapport VA2006_43, VisAdvies, Utrecht, NL.

De Nie HW (1996) Atlas van de Nederlandse zoetwatervissen. Stichting Atlas Verspreiding Nederlandse Zoetwater-vissen, Doetinchem. NL.

De Ridder T (1999) Tweeduizend jaar oude dammen en duikers te Vlaardingen. Tijdschrift voor Waterstaatgeschiedenis 8: 10-22. NL.

De Ridder T (2000) Van donk tot stad - Water: vriend en vijand. Historisch Jaarboek Vlaardingen. Historische Vereniging Vlaardingen, NL.

De Ridder T (2003) Watermanagement rond het begin van de jaartelling (with drawings by B Koster). 33e Reuvens-dagen. Samenvattingen lezingen / posters, Vlaardingen, NL.

De Ridder T (2005) Wassermanagement in Römischer Zeit: die altesten Deltawerke in Westeuropa. In: Endlich C (ed) Kulturlandschaft Marsch. Natur - Geschichte - Gegenwart, pp. 60-67. Vorträge anlässlich des Symposiums in Oldenburg, 3-5 Juni 2004. Isensee-Verlag, Oldenburg, GER.

Deaton LE & Greenberg MJ (1986) There is no horohalinicum. Estuaries 9: 20-30.

DeBerry DA & Perry JE (2000a) An introduction to wetland seed banks. Wetlands Program Technical Report No. 00-2. College of William and Mary, Virginia Institute of Marine Science, Gloucester Point, VA, USA.

DeBerry DA & Perry JE (2000b) Wetland seed banks: research in natural and created wetlands. Wetlands Program Technical Report No. 00-4. College of William and Mary, Virginia Institute of Marine Science, Gloucester Point, VA, USA.

DeBerry DA & Perry JE (2004) Comparison of early successional plant structure and composition in a created and natural non-tidal wetland. Castanea 69: 185-193. USA.

Decleer K (1988) Temporary inundation as a determining factor for the spider communities of marshland habitats. XI. Europaisches Arachnologisches Colloquium, Berlin, pp. 161-167. Technische Universität Berlin, GER.

Decleer K (2003) Population dynamics of marshland spiders and carabid beetles due to flooding: about drowning, air bubbling, floating, climbing and recolonisation. Papers conference Towards natural flood reduction strategies, Warsaw, Poland.

Deegan B, Harrington TJ & Dundon P (2005) Effects of salinity and inundation regime on growth and distribution of *Schoenoplectus triqueter*. Aquatic Botany 81: 199-211.

Deegan LA (2002) Lessons learned: the effects of nutrient enrichment on the support of nekton by seagrass and salt marsh ecosystems. Estuaries 25: 727-742.

DeLaune RD, Smith CJ & Sarafyan MN (1986) Nitrogen cycling in a freshwater marsh of *Panicum hemitomon* on the deltaic plain of the Mississippi River. Journal of Ecology 74: 249-256.

DeLaune RD, Patrick WH Jr & Pezeshki SR (1987) Foreseeable flooding and death of coastal wetland forests. Environmental Conservation 14: 129-133.

DeLaune RD, Jugsujinda A, Peterson GW & Patrick WH Jr (2003) Impact of Mississippi River freshwater reintroduction on enhancing marsh accretionary processes in a Louisiana estuary. Estuarine, Coastal and Shelf Science 58: 652-666.

Den Boer PJ (1990) The survival value of migration in terrestrial arthropods. Biological Conservation 54: 175-192.

Den Hartog C (1963) The amphipods of the deltaic region of the rivers Rhine, Meuse and Scheldt in relation to the hydrography of the area. II. The Talitridae. Netherlands Journal Sea Research 2: 40-67.

Den Hartog C (1971) The border environment between the sea and the fresh water, with special reference to the estuary. Vie et Milieu, Suppl. 22: 739-751. FR.

Denman KL, Brasseur G, Chidthaisong A, Ciais P, Cox PM, Dickinson RE, Hauglustaine D, Heinze C, Holland EA, Jacob D, Lohmann U, Ramachandran S, Da Silva Dias PL, Wofsy SC & Zhang X (2007) Couplings between changes in the climate system and biogeochemistry. In: Solomon S, Qin D, Manning M, Chen Z, Marquis M, Averyt KB, Tignor M & Miller HL (eds). Climate change 2007: The physical science basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, pp. 499-587. Cambridge University Press, Cambridge, UK, and New York.

Dennis JV (1988) The great cypress swamps. Louisiana University Press, Baton Rouge, LA, USA.

DeOrsey S & Butler BA (2006) The birds of Dutchess County, New York: today and yesterday, a survey of current status and historical changes since 1870. Ralph T. Waterman Bird Club, Poughkeepsie, NY, USA.

Desender K & Maelfait JP (1999) Diversity and conservation of terrestrial arthropods in tidal marshes along the River Schelde: a gradient analysis. Biological Conservation 87: 221-229.

Desmit X, Vanderborght JP, Regnier P & Wollast R (2005) Control of phytoplankton production by physical forcing in a strongly tidal, well-mixed estuary. Biogeosciences 2: 205-218.

DG.Environment (2002) Interpretation note on 'estuaries' (habitat type 1130), with a view to aiding the selection, delimitation and management of sites of communitiy interest hosting this habitat type. Brussels, BEL

Diaz RJ (1974) Asiatic clam, *Corbicula manilensis* (Philippi), in the tidal James River, Virginia. Chesapeake Science 15: 118-120.

Diaz RJ (1978) Ecology of tidal freshwater and estuarine Tubificidae (Oligochaeta). In: Brinkhurst R & Cook D (eds) Aquatic Oligochaete Biology, pp. 319-330. Plenum Press, New York.

Diaz RJ (1989) Pollution and tidal benthic communities of the James River estuary, Virginia. Hydrobiologia 180: 195-211.

Diaz RJ (1994) Responses of tidal freshwater macrobenthos to sediment disturbance. Hydrobiologia 278: 201-212.

Diaz RJ & Schaffner LC (1990) The functional role of estuarine benthos. In: Haire M & Krome EC (eds) Perspectives on the Chesapeake Bay, 1990 - Advances in estuarine sciences, pp. 25-56. Chesapeake Research Consortium, report No. CBP/TRS41/90, Gloucester Point, VA, USA.

Diaz RJ, Boesch DF, Haver JL, Stone CA & Munson K (1978) Part II: Aquatic biology – benthos. In: Adams DD, Darby DA & Young RJ (eds) Habitat development field investigations Windmill Point marsh development site, James River, Virginia, pp. 18-54. U.S. Army Waterways Experiment Station Technical report D-77-23, Vicksburg, MS, USA.

Dippner JW (1998) Competition between different groups of phytoplankton for nutrients in the southern North Sea. Journal of Marine Systems 4: 181-198.

Disraeli DJ & Fonda RW (1979) Gradient analysis of the vegetation in a brackish marsh in Bellingham Bay, Washington. Canadian Journal of Botany 57: 465-475.

Doody JP (1987) The impact of 'reclamation' on the natural environment of the Wash. In: Doody JP & Barnet B (eds) The Wash and its environment, pp. 165-172. Research and Survey in nature conservation No 7. Nature Conservancy Council, Peterborough, UK

Doody JP (2001) Coastal conservation and management: an ecological perspective. Conservation Biology Series 13. Kluwer Academic Publisher, Boston, USA.

Doody JP (2004) 'Coastal squeeze' – an historical perspective. Journal of Coastal Conservation 10: 129-138.

Doumlele DG (1981) Primary production and seasonal aspects of emergent plants in a tidal freshwater marsh. Estuaries 4: 139-142.

Doumlele DG, Fowler KB & Silberhorn GM (1985) Vegetative community structure of a tidal freshwater swamp in Virginia. Wetlands 4: 129-145.

Dovel WL (1981) Ichthyoplankton of the lower Hudson Estuary, N.Y. New York Fish and Game Journal 28: 21-39. USA.

Drake BG, Peresta G, Beugeling E & Matamala R (1996) Long-term elevated CO_2 exposure in a Chesapeake Bay wetland: ecosystem gas exchange, primary production, and tissue nitrogen. In: Koch GW & Hooney HA (eds). Carbon dioxide and terrestrial ecosystems, pp. 197-214. Academic Press, San Diego, CA, USA.

Dresler PV & Cory RL (1980) The Asiatic clam, *Corbicula fluminea*, in the tidal Potomac River. Estuaries 3: 150-151.

Dubisch J (1985) Low country fevers: cultural adaptations to malaria in antebellum South Carolina. Social Science and Medicine 21: 641-649.

Duke N (2006) Australia's mangroves. University of Queensland, Brisbane, Australia.

Dunbar JB (1990) Land loss rates, Report 2, Louisiana Chenier Plain. U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS, USA.

Dunbar JB, Britsch LD & Kemp EB (1992) Land loss rates, Report 3, Louisiana coastal plain. U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS, USA.

Dunn C & Sharitz R (1990) History of *Murdannia keisak* (Commelinaceae) in the southeastern United States. Castanea 55: 122-129. USA.

Dunn ML (1978) Studies on the breakdown of freshwater tidal marsh plants. MS Thesis, University of Virginia. Charlottesville, VA, USA.

Dupre WR (1978) Annual report: young delta coastal processes study. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Boulder, CO, USA.

Duryea M & R Schmidt (1986) Feeding biology of tessellated darter (*Etheostoma olmstedi atromaculatum*) at Tivoli North Bay, Hudson River, New York. In: Blair EA & Cooper J (eds) Reports of the Hudson River National Estuarine Research Reserve, 1985, pp iii-1 to iii-19. New York State Department of Environmental Conservation, Annandale, NY, USA.

Dyer KR (ed) (1979) Estuarine hydrography and sedimentation - a handbook. Cambridge University Press, Cambridge, UK.

Dyer KR (1986) Coastal and estuarine sediment dynamics. John Wiley and Sons, New York.

Dyer KR (1989) Sediment processes in estuaries: future research requirements. Journal of Geophysical Research 94: 14327-14339.

Edinger GJ, Evans DJ, Gebauer S, Howard TJ, Hunt DM & Olivero AM (eds) (2002) Ecological communities of New York State. New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, NY, USA.

Edwards AMC & Winn PSJ (2006) The Humber Estuary, eastern England: strategic planning of flood defences and habitats. Marine Pollution Bulletin 53: 165-174.

Egan M (1881) A day in the Ma'sh. Scribner's 22: 343-351. USA.

Ehrenfeld JG (2000) Evaluating wetlands within an urban context. Urban Ecosystems 4: 69-85.

Eilers HP (1975) Plants, plant communities, net production and tide levels: the ecological biogeography of the Nehalem salt marshes, Tillamook Country, Oregon. PhD Dissertation, Oregon State University, Corvallis, OR, USA.

Eisma D (1986) Flocculation and de-flocculation of suspended matter in estuaries. Netherlands Journal of Sea Research 20: 183-199.

Eisma D (1998) Intertidal deposits: river mouths, tidal flats, and coastal lagoons. CRC Press, Boca Raton, LA, USA.

Eisma D, Chen S & Li A (1994) Tidal variations in suspended matter floc size in the Elbe river and Dollard estuaries. Netherlands Journal of Aquatic Ecology 28: 267-274.

Ellenberg H (1963) Vegetation Mitteleuropas mit den Alpen. E. Ulmer Verlag, Stuttgart, GER.

Elliot T (1986) Deltas. In: Reading HG (ed) Sedimentary environments and facies, pp. 113-154. Backwell Scientific Publications, Oxford, UK.

Elliott M & Dewailly F (1995) The structure and components of European estuarine fish assemblages. Netherlands Journal of Aquatic Ecology 29: 397-417.

Elliott M & Hemingway K (eds) (2002) Fishes in estuaries. Blackwell Science, London, UK.

Elliott M & McLusky DS (2002) The need for definitions in understanding estuaries. Estuarine, Coastal and Shelf Science 55: 815-827.

Elliott M, Hemingway KL, Cutts ND, Burdon DB, Allen JH, Thomson SM, Murby P Breine J, Van den Bergh E, Stevens M, Simoens I & Jager Z (2008) Estuarine ecosystem functioning and health. Harbasins WP2 report., IECS, Hull, UK.

Ellison RL & Nichols MM (1976) Modern and Holocene foraminifera in the Chesapeake Bay Region. Marine Sedimentation Special Publication No 1: 131-151. USA.

Emery KO (1980) Relative sea levels from tide-gauge records. Proceedings of the National Academy of Sciences 77: 6968-6972.

Emmett R, Llanso R, Newton J, Thom R, Hornberger M, Morgan C, Levings C, Copping A & Fishman P (2000) Geographic signatures of North American West Coast estuaries. Estuaries 23: 765-792.

English Nature (2002) Boundaries of proposed sites of community importance for estuaries in the Atlantic biogeographic region - Project 1130. Maritime Team English Nature Northminster House, Peterborough, UK.

Enklaar PTh (1924) De verovering van het Merwedegebied door graaf Dirk III in 1018. Tijdschrift voor Geschiedenis 39: 180-187. NL.

Enriquez S, Duarte CM & Sand-Jensen K (1993) Patterns in decomposition rates among photosynthetic organisms: the importance of detritus C:N:P content. Oecologia 94: 457-471.

Erickson JE, Megonigal JP, Peresta G & Drake BG (2007) Salinity and sea level mediate elevated CO_2 effects on C_3-C_4 plant interactions and tissue nitrogen in a Chesapeake Bay tidal wetland. Global Change Biology 13: 202-215.

Ernst CH & Ernst EM (2003) Snakes of the United States. Smithsonian Institution Press, Washington, DC.

Ernst CH, Lovich JE & Barbour RW (1994) Turtles of the United States and Canada. Smithsonian Institution Press, Washington, DC.

Escaravage V & Prins TC (2002) Silicate availability, vertical mixing and grazing control of phytoplankton blooms in mesocosms. Hydrobiologia 484: 33-48.

Eschenburg H (1928) Gemarkungsflora von Holm. Aus den Schriften des Naturwischenschaftigen Vereinigung für Schleswig-Holstein. GER.

Eschenburg H & Schulz A (1927) Gemarkungsflora von Holm und Plön. Aus den Schriften des Naturwissenschaftlichen Vereins für Schleswig-Holstein 18: 62-161. GER.

Ettinger WS (1982) Macrobenthos of the freshwater tidal Schuylkill River at Philadelphia, Pennsylvania. Journal of Freshwater Ecology 1: 599-606.

European Commission (2003) Common implementation strategy for the Water Framework Directive (2000/60/EC) guidance document number 5. Transitional and coastal waters. Typology, reference conditions and classification systems. Office for Official Publications of the European Communities, LUX.

European Commission (2005) Commission Decision of 17 August 2005 on the establishment of a register of sites to form the intercalibration network in accordance with Directive 2000/60/EC of the European Parliament and of the Council. Official Journal of the European Union L 243/1-48 (September 2005).

European Commission (2007) Interpretation Manual of European Union Habitats, Eur 27 (July 2007). http://www.europa.eu.int/comm/environment/nature

European Communities (2000) Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. Official Journal of the European Communities 43 (L327).

Evans DL (1982) Status reports on twelve raptors. Special Scientific Report No. 238. U.S. Department of the Interior. Fish and Wildlife Service, Washington, DC.

Evans J (1970) About nutria and their control. U.S. Department of Interior Bureau of Sport Fisheries and Wildlife. Denver, CO, USA.

Evans J (1983) Nutria. In: Timm RM (ed) Prevention and control of wildlife damage, pp. B-61 to B-70. Cooperative Extension Service, University of Nebraska, Lincoln, NB, USA.

Evers DE, Holm GO & Sasser CE (1996) Digitization of the floating marsh maps in the Barataria and Terrebonne basins, Louisiana. Barataria-Terrebonne National Estuary Program, Thibodaux, LA, USA.

Evers DE, Sasser CE, Gosselink JG, Fuller DA & Visser JM (1998) The impact of vertebrate herbivores on wetland vegetation in Atchafalaya Bay, Louisiana. Estuaries 21: 1-13.

Ewanchuk PJ & Bertness MD (2004) Structure and organization of a northern New England salt marsh plant community. Journal of Ecology 92: 72-85.

Ewing K (1986) Plant growth and productivity along complex gradients in a Pacific northwest brackish intertidal marsh. Estuaries 9: 49-62.

Fairbanks, RG (1989) A 17,000-year glacio-eustatic sea level record; influence of glacial melting rates on the Younger Dryas event and deep ocean circulation. Nature 342: 637-642.

Fairbridge RW (1980) The estuary: its definition and geochemical role. In: Olausson E & Cato I (eds) Chemistry and geochemistry of estuaries, pp. 1-35. John Wiley, New York.

Farnsworth EJ & Ellis DR (2001) Is purple loosestrife (*Lythrum salicaria*) an invasive threat to freshwater wetlands? Conflicting evidence from several ecological metrics. Wetlands 21: 199-209.

Farnsworth EJ & Meyerson LA (1999) Species composition and inter-annual dynamics of a freshwater tidal plant community following removal of the invasive grass, *Phragmites australis*. Biological Invasions 1: 115-127.

Farnsworth EJ & Meyerson LA (2003) Comparative ecophysiology of four wetland plant species along a continuum of invasiveness. Wetlands 23: 750-762.

Faulhaber P (2000) Veränderung hydraulisch-morphologischer Parameter der Elbe. Mitteilungsblatt der Bundesanstalt für Wasserbau 82: 97-117. Wedel, GER.

Fenner M (1985) Seed ecology. Chapman and Hall, London.

Ferguson HA & Wolff WJ (1983) The Haringvliet-project: the development of the Rhine-Meuse estuary from tidal inlet to stagnant freshwater lake. Water Science and Technology 16: 11-26.

Fernald ML, Kinsey AC & Rollins RC (1958) Edible wild plants of eastern North America. Harper & Row, New York.

Ferren R Jr (1975-1976) Aspects of the intertidal zones, vegetation, and flora of the Maurice River system, New Jersey. Bartonia 44: 58-67. USA.

Ferren WR Jr & Schuyler AE (1980) Intertidal vascular plants of river systems near Philadelphia. Proceedings of the Academy of Natural Science of Philadelphia 132: 86-120. USA

Ferren WR Jr, Good RE, Walker R & Arsenault J (1981) Vegetation and flora of Hog Island, a brackish wetland in the Mullica River, New Jersey. Bartonia 48: 1-10. USA.

Field DW, Reyer AJ, Genovese PV & Shearer BD (1991) Coastal wetlands of the United States. A special NOAA 20th Anniversary Report. Strategic Assessment Branch. Ocean Assessments Division. Office of Oceanography and Marine Assessment. National Ocean Service. National Oceanic and Atmospheric Administration and U.S. Fish and Wildlife Service, USDI, Washington, DC.

Field RT & Phillip KR (2000) Vegetation changes in the freshwater tidal marshes of the Delaware estuary. Wetlands Ecology and Management 8: 79-88.

Findlay SEG, Schoeberl K & Wagner B (1989) Abundance, composition, and dynamics of the invertebrate fauna of a tidal freshwater wetland. Journal of the North American Benthological Society 8: 140-148.

Findlay SEG, Howe K & Austin HK (1990) Comparison of detritus dynamics in two tidal freshwater wetlands. Ecology 71: 288-295.

Findlay S, Pace ML & Lints D (1991) Variability and transport of suspended sediment, particulate and dissolved organic carbon in the tidal freshwater Hudson River. Biogeochemistry 12: 149-169.

Findlay SEG, Pace ML & Fischer DT (1996) Spatial and temporal variability in the lower food web of the tidal freshwater Hudson River. Estuaries 19: 866-873.

Findlay SEG, Pace ML & Fischer DT (1998a) Response of heterotrophic planktonic bacteria to the Zebra Mussel invasion of the tidal freshwater Hudson River. Microbial Ecology 36: 131-140.

Findlay SEG, Sinsabaugh RL, Fischer DT & Franchini P (1998b) Sources of dissolved organic carbon supporting planktonic bacterial production in the tidal freshwater Hudson River. Ecosystems 1: 227-239.

Findlay SEG, Dye S & Kuehn KA (2002a) Microbial growth and nitrogen retention in litter of *Phragmites australis* compared to *Typha angustifolia*. Wetlands 22: 616-625.

Findlay SEG, Tank J, Dye S, Valett HM, Mulholland PJ, McDowell WH, Johnson SL, Hamilton SK, Edmonds J, Dodds WK & BowdenWB (2002b) A cross-system comparison of bacterial and fungal biomass in detritus pools of headwater streams. Microbial Ecology 43: 55-66.

Findlay SEG, Groffman P & Dye S (2003) Effects of *Phragmites australis* removal on marsh nutrient cycling. Wetland Ecology and Management 11: 157-165.

Findlay SEG, Wigand C & Nieder WC (2006) Submersed macrophyte distribution and function in the tidal freshwater Hudson River. In: Levinton JS & Waldman JR (eds) The Hudson River estuary, pp. 230-241. Cambridge University Press, New York.

Firth A (2000) Development-led archaeology in coastal environments: investigations at Queenborough, Motney Hill and Gravesend in Kent, UK. In: Pye K & Allen JRL (eds) Coastal and estuarine environments: sedimentology, geomorphology and geoarchaeology. Special Publications 175: 403-417. Geological Society, London.

Fisher TR, Hagy JD III, Boynton WR & Williams MR (2006) Cultural eutrophication in the Choptank and Patuxent estuaries of Chesapeake Bay. Limnology and Oceanography 51: 435-447.

Flemer DA, Heinle DR, Keefe CW & Hamilton DH (1978) Standing crops of marsh vegetation of two tributaries of Chesapeake Bay. Estuaries 1: 157-163.

Flynn KJ (2005) Castles built on sand: dysfunctionality in plankton models and the inadequacy of dialogue between biologists and modellers. Journal of Plankton Research 27: 1205-1210.

Flynn KM, McKee KL & Mendelssohn IA (1995) Recovery of freshwater marsh vegetation after a saltwater intrusion event. Oecologia 103: 63-72.

Fockema Andreae GJ (1950) Studies over waterschapsgeschiedenis III, De Grote of Zuidhollandse Waard. Brill, Leiden, NL.

Fogel ML & Tuross N (1999) Transformation of plant biochemicals to geological macromolecules during early diagenesis. Oecologia 120: 336-346.

Folker RV (1987) An ecological study of *Hydrilla* in the Potomac River; waterfowl segment. Technical Report A-87-1. United States Army Corps of Engineers, Washington, DC.

Foppen R & Deuzeman S (2007) De Grote karekiet in de noordelijke randmeren; een dilemma voor natuurontwikkelingsplannen!? De Levende Natuur 108: 20-26. NL.

Ford MA & Grace JB (1998) Effects of vertebrate herbivores on soil processes, plant biomass, litter accumulation and soil elevation changes in a coastal marsh. Journal of Ecology 86: 974-982.

Ford MA, Cahoon DR & Lynch JC (1999) Restoring marsh elevation in a rapidly-subsiding salt marsh by thin-layer deposition of dredge material. Ecological Engineering 12: 189-205.

Forrest J (1988) Lord I'm coming home: everyday aesthetics in Tidewater North Carolina. Cornell University Press, Ithaca, NY, USA.

Fowler BK & Hershner C (1989) Primary production in Cohoke Swamp; a tidal freshwater wetland in Virginia. In: Sharitz RR & Gibbone JW (eds) Freshwater wetlands and wildlife symposium: perspectives on natural, managed and degraded ecosystems, pp. 365-374. U.S. Department of Energy, Office of Scientific and Technical Information, Oak Ridge, TN, USA.

Frankignoulle M, Abril G, Borges A, Bourge I, Canon C, Delille B, Libert E & Theate J-M (1998) Carbon dioxide emission from European estuaries. Science 282: 434-436.

Frazier DE (1967) Recent deltaic deposits of the Mississippi River, their development and chronology. Gulf Coast Association of Geological Societies Transactions 17: 287-315. USA.

Friebele E & Zambo J (2004) A guide to the amphibians and reptiles of Jug Bay. Publication of the Chesapeake Bay National Estuarine Research Reserve, Department of Natural Resources, Annapolis, MD, USA.

Friebele E, Swarth CW & Stafford K (2001) The ecology and history of Jug Bay: a volunteer's guide. Chesapeake Bay National Estuarine Research Reserve - Maryland, Maryland Department of Natural Resources, Annapolis, MD, USA.

Friedrichs CT & Perry JE (2001) Tidal salt marsh morphodynamics: a synthesis. Journal of Coastal Research - Special Issue 27: 7-37.

Frings, RM & Kleinhans MG (2008) Complex variations in sediment transport at three large river bifurcations during discharge waves in the river Rhine. Sedimentology 55: 1145-1171.

Froomer NL (1980) Sea-level changes in the Chesapeake Bay during historic times. Marine Geology 36: 289-305.

Frost JW, Schleicher T & Craft CB (2009) Effects of nitrogen and phosphorus additions on primary production and invertebrate densities in a Georgia (USA) tidal freshwater marsh. Wetlands 29: 196-203.

Fuller DA, Sasser CE, Johnson WB & Gosselink JG (1985) The effects of herbivory on vegetation on islands in Atchafalaya Bay, Louisiana. Wetlands 4: 105-114.

Fuller DA, Peterson GW, Abernethy RK & LeBlanc MA (1988) The distribution and habitat use of waterfowl in Atchafalaya Bay, Louisiana. In: Sasser CE & Fuller DA (eds) Vegetation and waterfowl use of islands in Atchafalaya Bay, pp. 73-103. Coastal Ecology Institute, Louisiana State University, Baton Rouge, LA, USA.

Funk RE (1976) Recent contributions to Hudson Valley prehistory. New York State Museum Memoir 22, USA.

Furumai H, Kawasaki T, Futuwatari T & Kusuda T (1988) Effect of salinity on nitrification in a tidal river. Water Science and Technology 20: 165-174.

Galatowitsch SM, Anderson NO & Ascher PD (1999) Invasiveness in wetland plants in North America. Wetlands 19: 733-755.

Gannett Fleming (2001) Plans of Route 29 - Open water mitigation, Township of Hamilton, County of Mercer. Gannett Fleming, Inc., Hammonton, NJ, USA.

Garniel A & Mierwald U (1996) Changes in the morphology and vegetation along the human-altered shoreline of the Lower Elbe. In: Nordstrom KF & Roman CT (eds) Estuarine shores: evolution, environments and human alterations, pp. 375-396. John Wiley & Sons, Chichester, UK.

Garniel A & Mierwald U (2005) Konventionsvorschlag für eine länderübergreifend angestimmte Meldepraxis des Lebesraumtyps [1130] [Ästuarien] an der Unterelbe. Kieler Institut für Landschaftsökologie. Kiel, GER.

Garnier J, Billen G & Coste M (1995) Seasonal succession of diatoms and Chlorophyceae in the drainage network of the Seine River: Observations and modelling. Limnology and Oceanography 40: 750-765.

Garnier J, Servais P, Billen G, Akopian M & Brion N (2001) Lower Seine river and estuary (France) carbon and oxygen budgets during low flow. Estuaries 24: 964-976.

Garnier J, Cebron A, Tallee G, Billen G, Sebilo M & Martinez A (2006) Nitrogen behaviour and nitrous oxide emission in the tidal Seine River estuary (France) as influenced by human activities in the upstream watershed. Biogeochemistry 77: 305-326.

Garono RJ, Robinson R & Simenstad C (2003) Estuarine and tidal freshwater habitat cover types along the lower Columbia River estuary determined from Landsat 7 ETM + Imagery. Wetlands and Watershed Assessment Group. Corvallis, OR, USA.

Gaudet JJ (1977) Uptake, accumulation, and loss of nutrients by papyrus on tropical swamps. Ecology 58: 415-422.

Gaumert Th (1982) 100 Jahre Elbe-Forschung. Hydrobiologische Situation und Fischbestand 1842-1943 unter dem Einfluß von Stromverbau und Sieleinleitungen. Archiv für Hydrobiologie, Suppl. 61: 317-376.

George M (1992) The land use, ecology and conservation of Broadland. Packard Publishing Limited, Chichester, UK.

Gerkens M & Thiel R (2001) Habitat use of age-0 twaite shad (*Alosa fallax* Lacepede, 1803) in the tidal freshwater region of the Elbe River, Germany. Bulletin Francais de la Peche et de la Pisciculture 362-263: 773-784. FR.

Gertler E (1992) Garden State canoeing: a paddler's guide to New Jersey. Seneca Press, Silver Spring, MD, USA.

Gibbs RJ (1970) Circulation in the Amazon River estuary and adjacent Atlantic Ocean. Journal of Marine Research 28**:** 113-123.

Giddy IH (2003) The Hudson River water trail guide. River Water Trail Association, New York.

Gilbert H (1990) Productivité végétale dans un marais intertidal d'eau douce, Québec (Québec). Canadian Journal of Botany 68: 825-856.

Giroux J & Bédard J (1987) The effects of grazing by greater snow geese on the vegetation of tidal marshes in the St. Lawrence Estuary. Journal of Applied Ecology 24: 773-788.

Giroux J & Bédard J (1995) Seed production, germination rate, and seedling establishment of *Scirpus pungens* in tidal brackish marshes. Wetlands 15: 290-297.

Gittenberger E, Backhuys W & Ripken ThEJ (1970) De landslakken van Nederland. Bibliotheek KNNV no. 17, Amsterdam, NL.

Gittenberger E, Janssen AW, Kuijper WJ, Kuiper JG, Meijer T, Van de Velde G & De Vries JN (1999) De Nederlandse zoetwatermollusken. Nederlandse Fauna 2. Nationaal Natuurhistorisch Museum Naturalis, KNNV Uitgeverij & EIS-Nederland, Leiden, NL.

Glad JB & Halse RR (1993) Invasion of *Amorpha fruticosa* L. (Leguminosae) along the Columbia and Snake Rivers in Oregon and Washington. Madroño 40: 62-63. USA.

Gleason HA & Cronquist A (1991) Manual of vascular plants of the northeastern United States and adjacent Canada. The New York Botanical Garden, Bronx, NY, USA.

Glöer P (2002a) Die Süßwassergastropoden Nord- und Mitteleuropas. Conchbooks, Hackenheim, GER.

Glöer P (2002b) Die Molluskenfauna der Elbe bei Hamburg und angrenzender Gewässer vor 100 Jahren und heute. Ein vorläufiger Bericht. Collectanea Malacologica – Festschrift für Gerhard Falkner: 479-517. Conchbooks, Hackenheim, GER.

Glunt RR (ca. 1969) The old lighthouses of the Hudson River. Moran Printing Company, Grove, PA, USA.

Glunt RR (1975) Lighthouses and legends of the Hudson. Library Research Associates, Monroe, NY, USA.

Gocke K & Lenz J (2004) A new 'turbulence incubator' for measuring primary production in non-stratified waters. Journal of Plankton Research 26: 357-369.

Godfrey RK & Wooten JW (1979) Aquatic and wetland plants of the southeastern United States: Monocotyledons. University of Georgia Press, Athens, GA, USA.

Godfrey RK & Wooten JW (1981) Aquatic and wetland plants of the southeastern United States: Dicotyledons. University of Georgia Press, Athens, GA, USA.

Godin G (1999) The propagation of tides up rivers with special considerations on the Upper Saint Lawrence river. Estuarine, Coastal and Shelf Science 48: 307-324.

Goldblatt LA (2004) Purple loosestrife (*Lythrum salicaria*) in the Chesapeake Bay watershed: a regional management plan. Regional *Lythrum salicaria* Working Group, Chesapeake Bay, USA. (Viewed 25 Febr. 2008 at http://www.anstaskforce.gov/).

Gomez M & Day F (1982) Litter nutrient content and production in the Great Dismal Swamp. American Journal of Botany 69: 1314-1321.

Good P & Lowe J (2006) Emergent behavior and uncertainty in multi-model climate projections of precipitation trends at small spatial scales. Journal of Climatology 27: 357-375.

Good RE & Good NF (1974-1975) Vegetation and production of the Woodbury Creek-Hessian Run freshwater tidal marshes. Bartonia 43: 38-45. USA.

Good RE, Whigham DF & Simpson RL (eds) (1978) Freshwater wetlands, ecological processes and management potential. Academic Press, New York, USA.

Goosen NK, Kromkamp J, Peene J, Van Rijswijk P & Van Breugel P (1999) Bacterial and phytoplankton production in the maximum turbidity zone of three European estuaries: the Elbe, Westerschelde and Gironde. Journal of Marine Systems 22: 151-171.

Gordon BL (1979) Monterey Bay area: natural history and cultural imprints. The Boxwood Press, Pacific Grove, CA, USA.

Gosselink JG (1984) The ecology of delta marshes of coastal Louisiana: a community profile, U.S. Fish Wildlife Service. Washington, DC.

Gosselink JG, Coleman JM & Stewart RE Jr (1998) Coastal Louisiana. In: Mac MG, Opler PA, Puckett-Haecher CE & Doran PD (eds) Status and trends of the nation's biological resources, Volume 1, pp. 386-436. U.S. Department of the Interior, U.S. Geological Survey, Reston, VA, USA.

Gottschalk LC (1945) Effects of soil erosion on navigation in upper Chesapeake Bay. Geographical Review 35: 219-238.

Grabemann I & Krause G (2001) On different time scales of suspended matter dynamics in the Weser estuary. Estuaries 24: 688-698.

Grabemann I, Uncles RJ, Krause G & Stephens JA (1997) Behaviour of turbidity maxima in the Tamar (U.K.) and Weser (F.R.G.) estuaries. Estuarine, Coastal and Shelf Science 45: 235-246.

Grant A & Middleton R (1993) Trace metals in sediments from Humber estuary: a statistical analysis of spatial uniformity. Netherlands Journal of Aquatic Ecology 27: 111-120.

Gratton C & Denno RF (2003) Inter-year carryover effects of a nutrient pulse on *Spartina* plants, herbivores, and natural enemies. Ecology 84: 2692-2707.

Graveland J (1998) Reed die-back, water level management and the decline of the Great Reed Warbler *Acrocephalus arundinaceus* in the Netherlands. Ardea 86: 187-201. NL.

Gray A, Simenstad CA, Bottom DL & Cornwell TJ (2002) Contrasting functional performance of juvenile salmon habitat in recovering wetlands of the Salmon River estuary, Oregon, USA. Restoration Ecology 10: 514-526.

Greenway D & R (1999) Hamilton/Trenton Marsh management plan. D & R Greenway, One Preservation Place, Princeton, NJ, USA.

Gribsholt B, Boschker HTS, Struyf E, Andersson M, Tramper A, De Brabandere L, Van Damme S, Brion N, Meire P, Dehairs F, Middelburg JJ & Heip C (2005) Nitrogen processing in a tidal freshwater marsh: a whole ecosystem ^{15}N labeling study. Limnology & Oceanography 50: 1945-1959.

Gribsholt B, Struyf E, Tramper A, Andersson MGI, Brion N, De Brabandere L, Van Damme S, Meire P, Middelburg JJ, Dehairs F & Boschker HTS (2006) Ammonium transformation in a nitrogen-rich tidal freshwater marsh. Biogeochemistry 80: 289-298.

Gribsholt B, Struyf E, Tramper A, De Brabandere L, Brion N, Van Damme S, Meire P, Dehairs F, Middelburg JJ & Boschker HTS (2007) Nitrogen assimilation and short term retention in a nutrient-rich tidal freshwater marsh – a whole ecosystem ^{15}N enrichment study. Biogeosciences 4: 11-26

Grieser KA & Dalton SE (2006) Quantification and characterization of recreational paddling on Tivoli Bays and Constitution Marsh. In: Nieder WC & Waldman JR (eds) Final reports of the Tibor T. Polgar Fellowship Program 2005, pp. vii-1 to viii-36. Hudson River Foundation, New York.

Griffith AB & Forseth IN (2003) Establishment and reproduction of *Aeschynomene virginica* (L.) (Fabaceae), a rare, annual wetland species in relation to vegetation removal and water level. Plant Ecology 167: 117-125.

Grobbelaar JU (1990) Modelling phytoplankton productivity in turbid waters with small euphotic to mixing depth ratios. Journal of Plankton Research 12: 923-931.

Grossinger R, Alexander J, Cohen AN & Collins JN (1998) Introduced tidal marsh plants in the San Francisco Estuary. San Francisco Estuary Institute, Oakland, CA, USA.

Guézennec L, Lafite R, Dupont JP, Meyer R & Boust D (1999) Hydrodynamics of suspended particulate matter in the tidal freshwater zone of a macrotidal estuary (the Seine estuary, France). Estuaries 22: 717-727.

Hack JT (1960) Interpretation of erosional topography in humid temperate regions. American Journal of Science 258A: 80-97.

Hackney CT & Yelverton GF (1990) Effects of human activities and sea level rise on wetland ecosystems in the Cape Fear River estuary, North Carolina, USA. In: Whigham DF, Good RE & Kvet J (eds) Wetland ecology and management: case studies, pp. 55-61. Kluwer Academic Publishers, Dordrecht, NL.

Hackney CT, Brady S, Stemmy L, Boris M, Dennis C, Hancock T, O'Brian M, Tilton C & Barbee E (1996) Does intertidal vegetation indicate specific soil and hydrologic conditions? Wetlands 16: 89-94.

Haecher CE & Doran PD (eds) Status and trends of the nation's biological resources, Volume 1, pp. 386-436. U.S. Department of the Interior, U.S. Geological Survey, Reston, VA, USA.

Hall D, Evans C, Hodder I & Pryor F (1987) The fenlands of East Anglia, England: survey and excavation. In: Coles JM & Lawson AJ (eds) European wetlands in prehistory, pp. 169-201. Clarendon Press, Oxford, UK.

Hall JV (1988) Alaska coastal wetland survey. National Wetlands Inventory, U.S. Fish and Wildlife Service, Anchorage, AK, USA.

Hall JV, Frayer WE & Wilen BO (1994) Status of Alaska wetlands. U.S. Fish and Wildlife Service, Washington, DC.

Hamerlynck O, Hostens K, Arellano RV, Mees J & Van Damme PA (1993) The mobile epibenthic fauna of soft bottoms in the Dutch Delta (south-west Netherlands): spatial structure. Netherlands Journal of Aquatic Ecology 27: 343-358.

Hammerschlag RS, Baldwin AH, Krafft CC, Neff KP, Paul MM, Brittingham KD, Rusello K & Hatfield JS (2006) Five years of monitoring reconstructed freshwater tidal wetlands in the urban Anacostia River (2000-2004). Technical Reports of the US Geological Survey, Patuxent Wildlife Research Center and University of Maryland Department of Biological Resources Engineering. College Park, MD, USA.

Hansen WR & Eckel EB (1971) Setting and effects of the earthquake. In: National Research Council, Committee on the Alaska Earthquake. The great Alaska earthquake of 1964: geology, pp. 5-43. National Academy of Sciences, Washington, DC.

Hanson HC (1951) Characteristics of some grassland, marsh and other plant communities in western Alaska. Ecological Monographs 21: 317-378.

Haramis GM & Colona R (1998) The effect of nutria (*Myocastor coypus*) on marsh loss on the Eastern Shore. http://www.pwrc.usgs.gov/resshow/nutria.htm (Viewed January 2008).

Haramis GM & Kearns GD (2007a) Herbivory by resident geese: The loss and recovery of wild rice along the tidal Patuxent River. Journal of Wildlife Management 71: 788-794.

Haramis GM & Kearns GD (2007b) Soras in tidal marsh: banding and telemetry studies on the Patuxent River. Waterbirds 30 (Special Publication 1): 105-121.

Harbasins (2008) Steps towards a harmonized transnational management strategy for coastal and transitional waters. Overal final report of Harbasins. Rijkswaterstaat, Lelystad, NL.

Hardell L & Eriksson M (1999) A case-control study of non-Hodgkin lymphoma and exposure to pesticides. Cancer 85: 1353-1360.

Harding JJ & Harding JJ (1980) Birding the Delaware Valley region: a comprehensive guide to bird watching in southeastern Pennsylvania, central and southern New Jersey, and north central Delaware. Temple University Press, Philadelphia, PA, USA.

Hare JA & Able KW (2007) Mechanistic links between climate and fisheries along the east coast of the United States: explaining population outbursts of Atlantic croaker (*Micropogonias undulatus*). Fisheries Oceanography 16: 31-45.

Harris LD & Cropper WP Jr (1992) Between the devil and the deep blue sea: implications of climate change for Florida's fauna. In: Peters RL & Lovejoy TE (eds) Global warming and biological diversity, pp. 309-324. Yale University Press, New Haven, CT, USA.

Harvey JW, Chambers RM & Hoelscher JR (1995) Preferential flow and segregation of porewater solutes in wetland sediment. Estuaries 18: 568-578.

Haslam SM (1972) *Phragmites communis*. Journal of Ecology 60: 585-610.

Hastings RW & Good RE (1977) Population analysis of the fishes of a freshwater tidal tributary of the lower Delaware River. Bulletin of the New Jersey Academy of Sciences 22: 13-20. USA.

Hauber DP, White DA, Powers SP & DeFrancesch FR (1991) Isozyme variation and correspondence with unusual infrared reflectance patterns in *Phragmites australis* (Poaceae). Plant Systematics and Evolution 178: 1-8.

Hawkins P & Leck CF (1977) Breeding bird communities in a tidal freshwater marsh. Bulletin of the New Jersey Academy of Science 22: 13-20. USA.

Healey MC (1982) Juvenile Pacific salmon in estuaries: the life support system. In: Kennedy VS (ed) Estuarine Comparisons, pp. 315-341. Academic Press, New York.

Healy MG & Hickey KR (2002) Historic land reclamation in the intertidal wetlands of the Shannon estuary, western Ireland. Journal of Coastal Research 36: 365-373.

Heemken OP, Stachel B, Theobald N & Wenclawiak BW (2000) Temporal variability of organic micropollutants in suspended particulate matter of the river Elbe at Hamburg and the river Mulde at Dressau, Germany. Archives of Environmental Contamination and Toxicology 38: 11-31.

Heij CJ & De Jong HF (1970) De mollusken van de "Esscheplaat" en een in de nabijheid gelegen afgedamde kreek, in relatie tot hun milieu. MSc Thesis, Zoologisch Museum, Utrecht University, NL.

Heinle DR & Flemer DA (1976) Flows of materials between poorly flooded tidal marshes and an estuary. Marine Biology 35: 359-373.

Heip C, Goosen N, Herman PMJ, Kromkamp J, Middelburg J & Soetaert K (1995) Production and consumption of biological particles in temperate tidal estuaries. Oceanography and Marine Biology: an Annual Review 33: 1-149.

Heise S, Calmano W, Ahlf W, Leal W & Krahn D (2005) Environmental challenges for the amburg stretch of the River Elbe and its catchment with regard to the Water Framework Directive. Watersketch study Elbe. Hamburg, GER.

Hejda M & Pysek P (2006) What is the impact of *Impatiens glandulifera* on species diversity of invaded riparian vegetation? Biological Conservation 132: 143-152.

Hellings L, Dehairs F, Van Damme S & Baeyens W (2001) Dissolved inorganic carbon in a highly polluted estuary (the Scheldt). Limnology and Oceanography 46: 1406-1414.

Hendrickx F (1996) Ecologische aspecten van enkele arthropoden-groepen van de schorren langsheen het Schelde-estuarium. Licentiaatsthesis Universiteit Gent, BEL.

Hendriks JPC, Van Beurden A, Weerts HTJ, Meijer T, Van Smeerdijk DG & Paalman DBS (2004) "Dar vordrunken 167 schone kerspele…" - Introductie op het moderne interdisciplinaire onderzoek naar de St. Elisabethsvloeden, 1421-1424. Westerheem, tijdschrift voor de Nederlandse archeologie 53: 94-111. NL.

Hepp GR & Bellrose FC (1995) Wood Duck (*Aix sponsa*). In: Poole A (ed) The birds of North America online. Cornell Lab of Ornithology, Ithaca, NY, USA. http://bna.birds.cornell.edu/bna/species/169, doi:bna.169 (Viewed Jan. 2008).

Herman PMJ, Middelburg JJ, Van de Koppel J & Heip CHR (1999) Ecology of estuarine macrobenthos. Advances in Ecological Research 29: 195-240.

Herschy RW (1995) Streamflow measurement. E & FN Spon, Londen.

Hesse ID, Day JW Jr & Doyle TW (1998) Long-term growth enhancement of baldcypress (*Taxodium distichum*) from municipal wastewater application. Environmental Management 22: 119-127.

Heyligers PC (1961) De bodemfauna van de grienden. In: Verwey et al. (eds) De Biesbosch, land van het levende water, pp. 85-117. Thieme, Zutphen, NL.

Heyligers PC (1965) The soil fauna of the osierbeds of the Brabantse Biesbosch. In: Tüxen R (ed) Biosoziologie, pp. 199-210. Junk, Den Haag, NL.

Hickey BM & Banas NS (2003) Oceanography of the U.S. Pacific Northwest coastal ocean and estuaries with application to coastal ecology. Estuaries 26: 1010-1031.

Hickman JC (1993) The Jepson manual: higher plants of California. University of California Press, Berkeley, CA, USA.

Hight SD, Blossey B, Laing J & DeClerck-Floate R (1995) Establishment of insect biocontrol agents from Europe against *Lythrum salicaria* in North America. Environmental Entomology 24: 967-977.

Higinbotham CB, Alber M & Chalmers AG (2004) Analysis of tidal marsh vegetation patterns in two Georgia estuaries using aerial photography and GIS. Estuaries 27: 670-683.

Hilgartner WB (1995) Habitat development in a freshwater tidal wetland: a paleoecological study of human and natural influences. PhD Dissertation, The Johns Hopkins University, Baltimore, MD, USA.

Hilgartner WB & Brush GS (2006) Prehistoric habitat stability and post-settlement habitat change in a Chesapeake Bay freshwater tidal wetland, USA. The Holocene 16: 479-494.

Hindman LJ, Dickson KM, Harvey WF & Serie JR (2003) Atlantic flyway Canada geese: New perspectives in goose management. In: Moser TJ, Vercauteren KC, Lien RD, Abraham KF, Andersen DE, Bruggink JG, Coluccy JM, Graber DA, Leafloor JO, Luukonen DR & Trost RE (eds) Proceedings of the 2003 International Canada Goose Symposium, pp. 12-21. Madison, WI, USA.

Hobbie JS (ed) (2000) Estuarine science: a synthetic approach to research and practice. Island Press, Washington, DC.

Hoek PPC (1910) De achteruitgang van de steurvisscherij onzer Benedenrivieren. Mededelingen Visscherij 17: 103. NL.

Hofer B (1913) Bericht über die Ergebnisse einer Untersuchung der Unterelbe von der Elbemündung bis Hamburg. Anlage zum Protokoll der Dradenau-Kommission vom 6.12.1913: 8. [cited after Gaumert 1982] GER.

Hoffnagle JR (1980) Estimates of vascular plant primary production in a west coast saltmarsh-estuary ecosystem. Northwest Science 54: 68-79. USA.

Hogg EH & Wein RW (1988a) The contribution of *Typha* components to floating mat bouyancy. Ecology 69: 1025-1031.

Hogg EH & Wein RW (1988b) Seasonal change in gas content and buoyancy of floating *Typha* mats. Journal of Ecology 76: 1055-1068.

Holdahl SA & Morrison NL (1974) Regional investigations of vertical crustal movements in the U.S., using precise relevelings and mareographic data. Tectophysics 23: 373-390.

Holm GO Jr & Sasser CE (2001) Differential salinity response between two Mississippi River subdeltas: implications for changes in plant composition. Estuaries 24: 78-89.

Holm GO Jr, Sasser CE, Peterson GW & Swenson EM (2000) Vertical movement and substrate characteristics of oligohaline marshes near a high-sediment, riverine system. Journal of Coastal Research 16: 164-171.

Hopkinson CS, Giblin AE, Tucker J & Garritt RH (1999) Benthic metabolism and nutrient cycling along an estuarine salinity gradient. Estuaries 22: 863-881.

Hopley D (1978) Sea level changes on the Great Barrier Reef. Philosophical Transactions of the Royal Society of London, Series A Mathematical and Physical Sciences 291: 159-166.

Horrevoets AC, Savenije HHG, Schuurman JN & Graas S (2004) The influence of river discharge on tidal damping in alluvial estuaries. Journal of Hydrology 294: 213-228.

Howard RJ & Mendelssohn IA (1999a) Salinity as a constraint on growth of oligohaline marsh macrophytes. I. Species variation in stress tolerance. American Journal of Botany 86: 785-794.

Howard RJ & Mendelssohn IA (1999b) Salinity as a constraint on growth of oligohaline marsh macrophytes. II. Salt pulses and recovery potential. American Journal of Botany 86: 795-806.

Howarth R (1984) The ecological significance of sulfur in the energy dynamics of salt marsh and coastal marine sediments. Biogeochemistry 1: 5-27.

Howarth RW (1988) Nutrient limitation of net primary production in marine ecosystems. Annual Review of Ecology and Systematics 19: 89-110.

Howarth RW, Marine R & Cole JJ (1988) Nitrogen-fixation in freshwater, estuarine, and marine ecosystems. 2. Biogeochemical controls. Limnology and Oceanography 33: 688-701.

Howarth RW, Schneider R & Swaney D (1996) Metabolism and organic carbon fluxes in the tidal freshwater Hudson River. Estuaries 19: 846-665.

Howarth RW, Sharpley A & Walker D (2002) Sources of nutrient pollution to coastal waters in the United States: Implications for achieving coastal water quality goals. Estuaries 25: 656-676.

Howat JK (1972) The Hudson River and its painters. Viking Press, New York.

Howe CM, Berrill M, Pauli BC, Helbing CC, Werry K & Veldhoen N (2004) Toxicity of glyphosate-based pesticides to four North American frog species. Environmental Toxicology and Chemistry 23: 1928-1938.

Huang X & Morris JT (2003) Trends in phosphatase activity along a successional gradient of tidal freshwater marshes on the Cooper River, South Carolina. Estuaries 26: 1281-1290.

Hull CHJ & Titus JT (1986) Greenhouse effect, sea level rise, and salinity in the Delaware estuary. U.S. Environmental Protection Agency, Washington, DC.

Hume IN (1994) The Virginia adventure: Roanoke to James Towne: an archaeological and historical odyssey. Alfred A. Knopf, New York.

Hummel M & Findlay S (2006) Effects of water chestnut (*Trapa natans*) beds on water chemistry in the tidal freshwater Hudson River. Hydrobiologia 559: 169-181.

Hummel M & Kiviat E (2004) Review of world literature on water-chestnut (*Trapa natans*) with implications for management in North America. Journal of Aquatic Plant Management 42: 17-28.

Hutchinson I (1986) Primary production functions of wetlands in the Pacific northwest. In: Strickland R (ed) Wetland Functions, Rehabilitation, and Creation in the Pacific Northwest, pp. 73-91. Washington State Department of Ecology, Olympia, WA, USA.

Immeyer J (1996) Untersuchungen zur Veränderung der ökologischen Bedingungen der Tideröhrichte an der Unterelbe zwischen den Kartierungen von Kötter und heute (1961-1995). Diplomarbeit am Institut für Angewandte Botanik, Universität Hamburg, GER.

Inglett PW, Reddy KR & McCormick PV (2004) Periphyton chemistry and nitrogenase activity in a northern Everglades ecosystem. Biogeochemistry 67: 213-233.

ISCWW (2002) Invasive species in the Chesapeake watershed workshop: Nutria (http://www.mdsg.umd.edu/exotics/ workshop/nutria.html).

Iverson LR & Prasad AM (1998) Predicting the abundance of 80 tree species following climate change in the eastern United States. Ecological Monographs 68: 465-485.

Jackson RH, Williams PJ Le B & Joint IR (1987) Freshwater phytoplankton in the low salinity region of the River Tamar estuary. Estuarine, Coastal and Shelf Science 25: 299-311.

Jacobs P, Steenkamp BPC & De Goederen S (2003) Analyse zoutmetingen inlaatproef Haringvliet in maart 1997. RIZA rapport 2003.001. Lelystad, NL.

Jaeckel SGA (1962) Ergänzungen und Berichtigungen zum rezenten und quartären Vorkommen der mitteleuropäischen Mollusken. In: Brohmer P, Ehrmann P & Ulmer G (eds), Die Tierwelt Mitteleuropas 2 (Lief.1, Erg.): 25-294. Quelle & Meyer, Leipzig, GER.

JBWS (Jug Bay Wetland Sanctuary) (2007a) Wetland plants of the Jug Bay Wetlands Sanctuary (http://www.jugbay.org/jugbay/wetlandplants.html).

JBWS (Jug Bay Wetland Sanctuary) (2007b) Mammals observed at the Jug Bay Wetlands Sanctuary (http://www.jugbay.org/jugbay/mammallist.html).

JBWS (Jug Bay Wetland Sanctuary) (2007c) Checklist of the birds of the Jug Bay Wetlands Sanctuary (http://www.jugbay.org/jugbay/birdlist.html).

JBWS (Jug Bay Wetland Sanctuary) (2007d) Fish occurring in the Patuxent River, wetlands and streams at Jug Bay (http://www.jugbay.org/jugbay/research/.html).

JBWS (Jug Bay Wetland Sanctuary) (2007e) Fish occurring in the Patuxent River, wetlands and streams at Jug Bay (http://www.jugbay.org/jugbay/research/herpsearch2001.html)

JCNERR (Jacques Cousteau National Estuarine Research Reserve) (1999) Mullica river - Great Bay (MRGB) National Estuarine Research Reserve in New Jersey. Final Management Plan. Institute of Coastal and Marine Science, Rutgers University, New Brunswick, NJ, USA.

Jefferson CA (1975) Plant communities and succession in Oregon coastal salt marshes. PhD Dissertation. Oregon State University, Corvallis, OR, USA.

Jensen J, Mudersbach C & Blasi C (2003) Hydrological changes in tidal estuaries due to natural and anthropogenic effects. Proceedings of the 6th International MEDCOAST 2003-Conference. Ravenna, Italy.

Jensen K (2007) Röhrichte in Ästuaren: Verbreitung, Ökosystemfunktion und Gefährdung. BFG Veranstaltungen 2: 5-19. GER.

Jickells TD & Rae JE (eds) (1997) Biogeochemistry of intertidal sediments. Cambridge University Press, Cambridge, UK.

JNNC (Joint Nature Conservation Committee) (1996). Guidelines for selection of biological SSSIs: intertidal marine habitats and saline lagoons. Peterborough, UK.

Jochems H, Schneiders A, Denys L & Van den Bergh E (2002) Typologie van de oppervlaktewateren in Vlaanderen. Eindverslag van het project VMM. KRLWtypology 2001 IN.O.2002.27. INBO, Brussels, BEL.

Johnson AS, Hillestad HO, Shanholtzer SF & Shanholtzer GF (1974) An ecological survey of the coastal region of Georgia. National Park Service Scientific Monograph Series 3, Washington, DC.

Johnson Randall LA & Foote AL (2005) Effects of managed impoundments and herbivory on wetland plant production and stand structure. Wetlands 25: 38-50.

Johnson WB, Sasser CE & Gosselink JG (1985) Succession of vegetation in an evolving river delta, Atchafalaya Bay, Louisiana. Journal of Ecology 73: 973-986.

Joint Nature Conservation Committee (1996) Guidelines for selection of biological SSSIs: intertidal marine habitats and saline lagoons. Peterborough, UK.

Jones RC & Kelso DP (2005) An ecological study of Gunston Cove. Final Report to Department of Public Works, Fairfax, VA, USA.

Jonkers N, Laane RWPM & De Voogt P (2003) Fate of nonylphenol ethoxylates and their metabolites in two Dutch estuaries: evidence of biodegradation in the field. Environmental Science Technology 37: 321-327.

Jordan TE, Correll DL & Whigham DF (1983) Nutrient flux in the Rhode River: Tidal exchange of nutrients by brackish marshes. Estuarine, Coastal and Shelf Science 17: 651-667.

Jordan TE, Corell DL, Miklas J & Weller DE (1991) Nutrients and chlorophyll at the interface of a watershed and an estuary. Limnology and Oceanography 36: 251-267.

Jordan TE, Cornwell JC, Boynton WR & Anderson JT (2008) Changes in phosphorus biogeochemistry along an estuarine salinity gradient: the iron conveyer belt. Limnology and Oceanography 53: 172-184.

Josselyn M (1983) The Ecology of San Francisco Bay tidal marshes: a community profile. Biological Report FWS/OBS-83/23. U.S. Fish and Wildlife Service, Division of Biological Services, Washington, DC.

Jurik TW, Wang S & Van der Valk AG (1994) Effects of sediment load on seedling emergence from wetland seed banks. Wetlands 14: 159-165.

Junk WJ (1983) Wetlands of tropical South America. In: Whigham D, Dykyjováand D & Hejný S (eds). Wetlands of the World: Inventory, Ecology and Management. Volume 1, pp. 679-739. Kluwer Academic Publishers, Dordrecht, NL.

Kadereit G & Kadereit JW (2005) Phylogenetic relationships, evolutionary origin, taxonomic status and genetic structure of the endangered local Lower Elbe river (Germany) endemic *Oenanthe conioides* (Nolte ex Rchb. f.) Lange (Apiaceae): ITS and AFLP evidence. Flora: Morphologie, Geobotanik, Oecophysiologie 200: 15-29. GER.

Kahn H & Brush GS (1994) Nutrient and metal accumulation in a freshwater tidal marsh. Estuaries 17: 345-360.

Kale HW II (1965) Ecology and bioenergetics of the long-billed marsh wren *Telmatodytes palustris griseus* (Brewster) in Georgia salt marshes. Nuttall Ornithological Club, Cambridge, MA, USA.

Kaminsky M & Scelsi P (1986) Route 130, Section 9F Rancocas Creek Bridge, Site iii Wetland Replacement. Bureau of Environmental Analysis, New Jersey Department of Transportation, Trenton, NJ, USA.

Kandus P & Malvárez AI (2004) Vegetation patterns and change analysis in the Lower Delta Islands of the Paraná River (Argentina). Wetlands 24: 620-632.

Kane R (2001a) *Phragmites* use by birds in New Jersey. Records of New Jersey Birds 9: 122–124. USA.

Kane R (2001b) *Phragmites*: a dissenting opinion. New Jersey Audubon (Winter 2000-2001): 25-26. USA.

Karl TR, Knight RW & Plummer N (1995) Trends in high-frequency climate variability in the 20th century. Nature 377: 217-220.

Kay SH (1995) Efficacy of wipe-on applications of glyphosate and imazapyr on common reed in aquatic sites. Journal of Aquatic Plant Management 33: 25-26.

Kays RW & Wilson DE (2002) Mammals of North America. Princeton University Press, Princeton, NJ, USA.

Kearney MS, Grace RE & Stevenson JC (1988) Marsh loss in Nanticoke Estuary, Chesapeake Bay. Geographical Review 78: 206-220.

Kearns GD, Kwartin NB, Brinker DF & Haramis GM (1998) Digital playback and improved trap design enhances capture of migrant soras and Virginia rails. Journal of Field Ornithology 69: 466-473. USA.

Kelley CA, Martens CS & Chanton JP (1990) Variations in sedimentary carbon remineralization rates in the White Oak River Estuary, North Carolina. Limnology and Oceanography 35: 372-383.

Kemble FA (1969) Journal of a residence on a Georgian plantation in 1838-1839. Afro-Am Books, Chicago, IL, USA.

Kerkhofs MJJ, Tiebosch T, Van der Velden JA & Kuijpers JWM (2005) Alternative management of the Haringvliet sluices: first step toward major rehabilitation of the Rhine-Meuse estuary. Archiv für Hydrobiologie Supplement 155 (Large Rivers 15): 569-577.

Kerner M (2007) Effects of deepening the Elbe Estuary on sediment regime and water quality. Estuarine, Coastal and Shelf Science 75: 492-500.

Keup L & Bayliss J (1964) Fish distribution at varying salinities in the Neuse River Basin, North Carolina. Chesapeake Science 5: 119-123. USA.

Khan H (1993) A paleoecological study of a freshwater tidal marsh. PhD Dissertation, The Johns Hopkins University, Baltimore, MD, USA.

Khan H & Brush GS (1994) Nutrient and metal accumulation in a freshwater tidal marsh. Estuaries 17: 345-360.

Kies L (1997) Distribution, biomass and production of planktonic and benthic algae in the Elbe estuary. Limnologica 27: 55-64.

KIfL (Kieler Institut für Landschaftsökologie) (2007) Ausgleichsmaßnahme Hahnöfer Sand. Monitoring des Schierlings-Wasserfenchels Ergebnisse 2004-2007. Unveröff. Gutachten im Auftrag der ReGe Hamburg. Kiel, GER.

Killgore KJ, Morgan RP II & Rybicki NB (1989) Distribution and abundance of fishes associated with submersed aquatic plants in the Potomac River. North American Journal of Fisheries Management 9: 101-111.

King R, DeLuca WV, Whigham DF & Marra PP (2007) Threshold effects of coastal urbanization on *Phragmites australis* (Common Reed) abundance and foliar nitrogen in Chesapeake Bay. Estuaries and Coasts 30: 469-481.

Kirchner JW, Finkel RC, Riebe CS, Granger DE, Clayton JL, King JG & Megahan, WF (2001). Mountain erosion over 10 yr, 10 k.y., and 10 m.y. time scales. Geology 29: 591-594.

Kistritz R (1996) Habitat compensation, restoration and creation in the Fraser River estuary: are we achieving a no-net-loss of fish habitat? Canadian Manuscript Report of Fisheries and Aquatic Sciences No. 2349. R.U. Kistritz Consultants Ltd., Richmond, BC, Canada.

Kittel TGF, Steffan WL & Chapin FS (2000) Global and regional modelling of Arctic-boreal vegetation distribution and its sensitivity to altered forcing. Global Change Biology 6: 1-18.

Kiviat E (1974) A fresh-water tidal marsh on the Hudson, Tivoli North Bay. In: Third Symposium on Hudson River Ecology, Paper No. 14. Hudson River Environmental Society, Bronx, NY, USA.

Kiviat E (1978a) Hudson River east bank natural areas, Clermont to Norrie. Nature Conservancy, Arlington, VA, USA.

Kiviat E (1978b) Vertebrate use of muskrat lodges and burrows. Estuaries 1: 196-200.

Kiviat E (1980) A Hudson River tidemarsh snapping turtle population. Transactions of the Northeast Section of the Wildlife Society 37: 158-168. USA.

Kiviat E (1989) The role of wildlife in estuarine ecosystems. In: Day J, Hall CAS, Kemp WM & Yáñez-Arancibia A (eds) Estuarine ecology, pp 438-476. John Wiley and Sons, New York.

Kiviat E (1991) Wetland human ecology. PhD Dissertation, Union Institute, Cincinnati, OH, USA.

Kiviat E (1994) Muskrat: manager of the marsh. News from Hudsonia 10: 1-3. USA.

Kiviat E (1996) American goldfinch nests in purple loosestrife. Wilson Bulletin 108: 182-186. USA.

Kiviat E (1999) Changing tides: Tivoli Bays: a Hudson River wetland. Purple Mountain Press, Fleischmanns, NY, USA.

Kiviat E (2004) Occurrence of *Ailanthus altissima* on a Maryland freshwater tidal estuary. Castanea 69: 139-142. USA.

Kiviat E (2006) *Phragmites* management sourcebook for the tidal Hudson River. Report to the Hudson River Foundation, New York, NY, Hudsonia Ltd., Annandale, NY. Available at www.hudsonia.org

Kiviat E & Barbour JG (1996) Wood turtles in fresh-tidal habitats of the Hudson River. Canadian Field-Naturalist 110: 341-343.

Kiviat E & MacDonald K (2004) Biodiversity patterns and conservation in the Hackensack Meadowlands, New Jersey. Urban Habitats 2: 28-61. USA.

Kiviat E & Stevens G (2002) Assessment manual for the Hudson River Estuary corridor. Hudsonia Ltd., New York Department Environmental Conservation, Albany, NY, USA.

Kiviat E, Findlay SEG & Nieder WC (2006) Tidal wetlands. In: Levinton JS & Waldman JR (eds) The Hudson River Estuary, pp. 279-295. Cambridge University Press, New York.

Klingel GC (1937) The Chesapeake marshes. Natural History Society of Maryland Bulletin 7: 30-35. USA

Knight MA & Pasternack GB (2000) Sources, input pathways, and distributions of Fe, Cu, and Zn in a Chesapeake Bay tidal freshwater marsh. Environmental Geology 39: 1359-1371.

Knight W (1980) The story of Browns Island. The Four Seasons 6: 3-10. USA.

Knights B & Phillips AJ (eds) (1979) Estuarine and coastal land reclamation and water storage. Saxon House, Westmead, Farnborough, UK.

Koch MS & Mendelssohn IA (1989) Sulphide as a soil phytotoxin: differential responses in two marsh species. Journal of Ecology 77: 565-578.

Koch MS, Mendelssohn IA & McKee KL (1990) Mechanism for the hydrogen sulphide-induced growth limitation in wetland macrophytes. Limnology and Oceanography 35: 399-408.

Koerselman W & Meuleman AFM (1996) The vegetation N:P ratio: a new tool to detect the nature of nutrient limitation. Journal of Applied Ecology 33: 1441-1450.

Kolb CR & Van Lopik JR (1958) Geology of the Mississippi deltaic plain - southeastern Louisiana. U.S. Army Corps of Engineers Waterways Experiment Station 482, Vicksburg, MS, USA.

Kominkova D, Kuehn KN, Busing N & Steiner D (2000) Microbial biomass, growth, and respiration associated with submerged litter of *Phragmites australis* decomposing in a littoral reed stand of a large lake. Aquatic Microbial Ecology 22: 271-282.

Köpcke B (2004) The importance of peripheral areas and mudflats for the maintenance of Eurytemora affinis (Poppe, 1880) (Copepoda; Crustacea) populations in the Elbe Estuary. Archiv für Hydrobiologie Suppl. 110: 329-443.

Kötter F (1961) Die Pflanzengesellschaften der Unterelbe. Archiv für Hydrobiologie, Suppl. 26: 106-184.

Kraft JC (1988) Geology. In: Bryant TK & Pennock JR (eds) The Delaware Estuary: rediscovering a forgotten resource, pp. 31-41. University of Delaware Sea Grant Program. Newark, DE, USA.

Krause LH, Rietsma C & Kiviat E (1997) Terrestrial insects associated with *Phragmites australis*, *Typha angustifolia*, and *Lythrum salicaria* in a Hudson River tidal marsh. In: Nieder WC & Waldman JR (eds) Reports of the Tibor T. Polgar Fellowship Program 1996, pp. v-1 to v-35. Hudson River Foundation, New York, USA.

Krauss KW, Chambers JL, Allen JA, Soileau DM Jr & DeBosier AS (2000) Growth and nutrition of baldcypress families planted under varying salinity regimes in Louisiana. Journal of Coastal Research 16: 153-163.

Kreeger DA & Newell RIE (2000) Trophic complexity between producers and invertebrate consumers in salt marshes. In: Weinstein MP & Kreeger DA (eds) Concepts and controversies in tidal marsh ecology, pp. 187-220. Kluwer Academic Publishers, Boston, MA, USA.

Krieg H-J (2005) Die Entwicklung eines modifizierten Potamon-Typie-Indexes (QK Benthische Wirbellosenfauna) zur Bewertung Okologischen Zustands Tideelbe von Geesthacht bis zur Seegrenze: Methodenbeschreibung AeTI (Aestuar Typie-Index) und Anwendungsbeispiele. Project AeTI V.1.0, ARGE ELBE/FHH WG ELBE 2005. Hamburg, GER.

Krieg H & Kies L (1989) Artenschutzprogramm Armleuchteralgen (Charophyta) und Süßwasser-Rotalgen (Rhodophyta) im Gebiet der Freien und Hansestadt Hamburg. Naturschutz und Landschaftspflege in Hamburg, Schriftenreihe der Umweltbehörde 30: 1-39. GER.

Kromkamp JC & Peene J (2005) Changes in phytoplankton biomass and primary production between 1991 and 2001 in the Westerschelde estuary (Belgium/The Netherlands). Hydrobiologia 540: 117-126.

Kromkamp JC, Peene J, van Rijswijk P, Sandee A & Goosen N (1995) Nutrients, light and primary production by phytoplankton and microphytobenthos in the eutrophic, turbid Westerschelde estuary (The Netherlands). Hydrobiologia 311: 9-19.

Kruchek BL (2004) Use of tidal marsh and upland habitats by the marsh rice rat (*Oryzomys palustris*). Journal of Mammalogy 85: 569-575.

Kuehn KA & Suberkropp K (1998) Diel fluctuations in rates of CO2 evolution from standing dead leaf litter of the emergent macrophyte *Juncus effusus* L. Aquatic Microbial Ecology 14: 171-182.

Kuijpers JWM (1995) Ecological restoration of the Rhine/Meuse estuary. Water Science and Technology 31(8): 187-195.

Kuiper JGJ & Wolff WJ (1970) The Mollusca of the estuarine region of the rivers Rhine, Meuse and Scheldt in relation to the hydrography of the area. III the genus Pisidium. Basteria 34: 1-40. NL.

Kulp MA (2000) Holocene stratigraphy, history, and subsidence: Mississippi River delta region, northcentral Gulf of Mexico. PhD Dissertation, University of Kentucky, Lexington, KY, USA.

Lamers LPM, Dolle G, Van Den Berg STG, Van Delft SPJ, Sebastiaan PJ & Roelofs JM (2001) Differential responses of freshwater wetland soils to sulphate pollution. Biogeochemistry 55: 87-102.

Lammers I (2005a) Natuurplannen voor Sophiapolder in stroomversnelling. Zuid-Hollands Landschap 2005(1): 22-23. NL.

Lammers I (2005b) Natuurontwikkeling langs de Oude Maas: groot profijt. Zuid-Hollands Landschap 2005(2): 4-7. NL.

Lampman GG, Caraco NF & Cole JJ (1999) Spatial and temporal patterns of nutrient concentration and export in the tidal Hudson River. Estuaries 22: 285-296.

Lancelot C, Billen G, Sournia A, Weisse T, Colijn F, Veldhuis M, Davies A & Wassman P (1987) Phaeocystis blooms and nutrient enrichment in the continental coastal zone of the North Sea. Ambio 16: 38-47.

Land Management Group (2004) McIntyre Tract: year four monitoring report, Brunswick County, North Carolina. Land Management Group, Inc., Wilmington, NC, USA. Accessed from http://pmu.dot.state.nc.us/doh/preconstruct/pe/NEU/Monitoring.

Lane RR, Day JW Jr & Thibodeaux B (1999) Water quality analysis of a freshwater diversion at Caernarvon, Louisiana. Estuaries 22: 327-336.

Lapin B & Nothnagle P (1995) Control of false indigo (*Amorpha fruticosa*), a non-native plant, in riparian areas in Connecticut. Natural Areas Journal 15: 279. USA.

Latham PJ, Pearlstine LG & Kitchens WM (1994) Species association changes across a gradient of fresh-water, oligohaline, and mesohaline tidal marshes along the lower Savannah River. Wetlands 14: 174-183.

Lavoie C, Jean M, Delisle F & Létourneau G (2003) Exotic plant species of the St. Lawrence River wetlands: a spatial and historical analysis. Journal of Biogeography 30: 537-549.

Lawrence S & Gross B (1984) The Audubon Society field guide to the natural places of the Mid-Atlantic States: Inland. Pantheon Books, New York.

LCWCRTF (Louisiana Coastal Wetlands Conservation and Restoration Task Force) (1998) Coast 2050: toward a sustainable coastal Louisiana, Louisiana Coastal Wetlands Conservation and Restoration Task Force, Baton Rouge, LA, USA.

LCWCRTF (Louisiana Coastal Wetlands Conservation and Restoration Task Force) (2006) The 2006 evaluation report to the U.S. Congress on the effectiveness of Coastal Wetlands Planning, Protection and Restoration Act projects. Louisiana Coastal Wetlands Conservation and Restoration Task Force, U.S. Army Corps of Engineers, New Orleans, LA, USA.

Leck MA (1989) Wetland seed banks. *In:* Leck MA, Parker VT & Simpson RL (eds) Ecology of soil seed banks, pp. 283-305. Academic Press, Inc., San Diego, CA, USA.

Leck MA (1996) Germination of macrophytes from a Delaware River tidal freshwater wetland. Bulletin of the Torrey Botanical Club 123: 48-67. USA.

Leck MA (2003) Seed-bank and vegetation development in a created tidal freshwater wetland on the Delaware River, Trenton, New Jersey, USA. Wetlands 23: 310-343.

Leck MA & Brock MA (2000) Ecological and evolutionary trends in wetlands: evidence from seeds and seed banks in New South Wales, Australia and New Jersey, USA. Plant Species Biology 15: 97-112 (Corrigendum 2001 16: 2183-2184).

Leck MA & Leck CF (2005) Vascular plants of a Delaware River tidal freshwater wetland and adjacent terrestrial areas: seed bank and vegetation comparisons of reference and constructed marshes and annotated species list. Journal of the Torrey Botanical Society 132: 323-354. USA.

Leck MA & Schütz W (2005) Regeneration of Cyperaceae, with particular reference to seed ecology and seed banks. Perspectives in Plant Ecology, Evolution and Systematics 7: 95-133.

Leck MA & Simpson RL (1987) Seed bank of a freshwater tidal wetland: turnover and relationship to vegetation change. American Journal of Botany 74: 360-370.

Leck MA & Simpson RL (1992) Effect of oil on recruitment from the seed bank of two tidal freshwater wetlands. Wetlands Ecology and Management 1: 223-231.

Leck MA & Simpson RL (1993) Seeds and seedlings of the Hamilton Marshes, a Delaware River tidal freshwater wetland. Proceedings of the Academy of Natural Sciences of Philadelphia 144: 267-281. USA.

Leck MA & Simpson RL (1994) Tidal freshwater wetland zonation: seed and seedling dynamics. Aquatic Botany 47: 61-75.

Leck MA & Simpson RL (1995) Ten-year seed bank and vegetation dynamics of a tidal freshwater marsh. American Journal of Botany 82: 1547-1557.

Leck MA, Simpson RL, Whigham DF & Leck CF (1988) Plants of the Hamilton Marshes: a Delaware River freshwater tidal wetland. Bartonia 54: 1-17. USA.

Leck MA, Simpson RL & Parker VT (1989) The seedbank of a freshwater tidal wetland and its relationship to vegetation dynamics. In: Sharitz R & Gibbons JW (eds) Proceedings symposium on freshwater wetlands and wildlife, pp. 198-205. USDOE Office of Scientific and Technical Information, Oak Ridge, TN, USA.

Leck MA, Baskin CC & Baskin JM (1994) Germination ecology of *Bidens laevis* (Asteraceae) from a freshwater tidal wetland. Bulletin of the Torrey Botanical Club 121: 230-239. USA.

Leijs R, Van Apeldoorn RC & R Bijlsma (1999) Low genetic differentiation in north-west European populations of the locally endangered root vole, Microtus oeconomus. Biological Conservation 87: 39-48.

Lensink CJ & Rothe TC (1986) Value of Alaskan wetlands for waterfowl. In: Alaska regional wetland functions – proceedings of a workshop, pp. 45-84. The Environmental Institute, University of Massachusetts, Amherst, MA, USA.

Leonard LA, Wren PA & Beavers RL (2002) Flow dynamics and sedimentation in *Spartina alterniflora* and *Phragmites australis* marshes of the Chesapeake Bay. Wetlands 22: 415-424.

Lepage M, Lobry J, Girardin M, Gonthier P (2004) Structure des assemblages ichtyologiques dans les milieux de transition de type estuarien. Contribution à la caractérisation de l'état écologique à partir du cas de la Gironde. Année 2004: typologie, échantillonage et suivi. Cémagref, Bordeaux, FR.

Leppaköski E, Gollasch S & Olenin S (eds) (2002) Invasive aquatic species in Europe. Kluwer Academic Publishers, Dordrecht, NL.

Leschke M (1909) Mollusken. Hamburgische Elb-Untersuchung. Mitteilungen des naturhistorischen Museums Hamburg 26 (2): 250-279. GER.

Lesourd S, Lesueur P, Brun-Cottan J-C, Auffret J-P, Poupinet N & Laignel B (2001) Morphosedimentary evolution of the macrotidal Seine estuary subjected to human impact. Estuaries 24: 940-949.

Levings CD & Nishimura DJH (1996) Created and restored sedge marshes in the lower Fraser River and estuary: an evaluation of their functioning as fish habitat. Canadian Technical Report of Fisheries and Aquatic Sciences 2126. Department of Fisheries and Oceans, West Vancouver, BC, Canada.

Levings CD & Nishimura DJH (1997) Created and restored marshes in the lower Fraser River, British Columbia: summary of their functioning as fish habitat. Water Quality Research Journal of Canada 32: 599-618.

Levings CD & Thom RM (1994) Habitat changes in Georgia Basin: implications for resource management and restoration. In: Wilson RCH, Beamish RJ, Aitkens F & Bell J (eds) Review of the marine environments and biota of Strait of Georgia, Puget Sound and Juan de Fuca Strait, pp. 300-351. Proceedings of the British Columbia/Washington Symposium on the Marine Environment. Canadian Technical Report of Fisheries and Aquatic Sciences Number 1948. Victoria, British Columbia, Canada.

Lichter J, Caron H, Pasakarnis TS, Rodgers SL, Squiers TS Jr & Todd CS (2006) The ecological collapse and partial recovery of a freshwater tidal ecosystem. Northeastern Naturalist 13: 153-178. USA.

Light HM, Darst MR, Lewis LJ & Howell DA (2002) Hydrology, vegetation, and soils of riverine and tidal floodplain forests of the lower Suwannee River, Florida, and potential impacts of flow reductions. Professional Paper 1656A, US Geological Survey, Washington, DC.

Lindsay P, Balls PW & West JR (1996) Influence of tidal range and river discharge on suspended particulate matter fluxes in the Forth estuary (Scotland). Estuarine, Coastal and Shelf Science 42: 63-82.

Lionard M, Muylaert K, Van Gansbeke D & Vyverman W (2005) Influence of changes in salinity and light intensity on growth of phytoplankton communities from the Schelde river and estuary (Belgium/The Netherlands). Hydrobiologia 540: 105-115.

Lippson AJ & Lippson RL (1997) Life in the Chesapeake Bay. Johns Hopkins University Press, Baltimore, MD, USA.

Lippson AJ, Haire MS, Holland AF, Jacobs F, Jenson J, Moran-Johnson RL, Polgar TT & Richkus WA (1979) Environmental Atlas of the Potomac Estuary. Williams and Heintz Map Corporation, Washington, DC.

Lips CJP (1938) Oudheidkundige vondsten in den Biesbosch. Number 3444 in Gemeente Archief Dordrecht, NL.

Lloyd FE & Tracy SM (1901) The insular flora of Mississippi and Louisiana. Bulletin of the Torrey Botanical Club 28: 61-101. USA.

LMS Engineers (2005) Marsh breeding bird survey in the Hudson River estuary, 2005. Prepared for the New York Department of Environmental Conservation. Lawlor, Matusky & Skelly Engineers, LLP, Pearl River, New York.

Lobry J, Mourand L, Rochard E & Elie P (2003) Structure of the Gironde estuarine fish assemblages: a comparison of European estuaries perspective. Aquatic Living Resources 16: 47-58.

Long LL & Ralph CJ (2001) Dynamics of habitat use by shorebirds in estuarine and agricultural habitats in northwestern California. Wilson Bulletin 113: 41-52. USA.

Longcore JR, McAuley DG, Hepp GR & Rhymer JM (2000) American Black Duck (*Anas rubripes*). In: Poole A (ed) The birds of North America online, Cornell Lab of Ornithology, Ithaca, NY. http://bna.birds.cornell.edu/bna/species/481, doi: bna.481 (Viewed January 2008).

Lopez GR (1988) Comparative ecology of the macrofauna of freshwater and marine muds. Limnology and Oceanography 33: 946-962.

Lotze HK, Lenihan HS, Bourque BJ, Bradbury RH, Cooke RG, Kay MC, Kidwell SM, Kirby MX, Petersons CH & Jackson JBC (2006) Depletion, degradation, and recovery potential of estuaries and coastal seas. Science 312: 1806-1809.

Louwe Kooijmans LP (1985) Sporen in het land. De Nederlandse Delta in de prehistorie. Meulenhof Informatief, Amsterdam.

Louwe Kooijmans LP (1987) Neolithic settlement and subsistence in the wetlands of the Rhine/Meuse delta of The Netherlands. In: Coles JM & Lawson AJ (eds) European wetlands in prehistory, pp. 227-251. Clarendon Press, Oxford, UK.

Louwe Kooijmans LP, Van den Broeke PW, Fokkens H & Van Gijn A (eds) (2005) The prehistory of The Netherlands. Amsterdam University Press, Amsterdam, NL.

Lucas Y, Luizao FJ, Chauvel A, Rouiller J & Nahon D (1993) The relation between biological activity of the rain forest and mineral composition of soils. Science 260: 521-523.

Luo YQ, Hui DF & Zhang DQ (2006) Elevated CO_2 stimulates net accumulations of carbon and nitrogen in land ecosystems: a meta-analysis. Ecology 87: 53-63.

Lynch JJ, O'Neal T & Lay DW (1947) Management significance of damage by geese and muskrats to gulf coast marshes. Journal of Wildlife Management 11: 50-76.

MacFarlane GT & Hebert RA (1984) Effect of oxygen tension, salinity, temperature, and organic matter concentration on the growth and nitrifying activity of an estuarine strain of *Nitrosomonas*. FEMS Microbiology Letters 23: 107-111.

Maes F & Neumann F (2004) The Habitats Directive and port development in coastal zones: experiences in safeguarding biodiversity. Journal of Coastal Conservation 10: 73-80.

Maes J, Taillieu A, Van Damme PA, Cottenie K & Ollevier F (1998) Seasonal patterns in the fish and crustacean community of a turbid temperate estuary (Zeeschelde estuary, Belgium). Estuarine, Coastal and Shelf Science 47: 143-151.

Maes J, Van Damme S, Meire P & Ollevier F (2004) Statistical modelling of seasonal and environmental influences on the population dynamics of an estuarine fish community. Marine Biology 145: 1033-1042.

Maes J, Belpaire C, Breine J & Goeman G (2005) Vissen als gezondheidsindicatoren voor de toestand van het Zeeschelde-ecosysteem. Water: 5(5): 1-7. BEL.

Magalhães CM, Joye SB, Moreira RM, Wiebe WJ & Bordalo AA (2005) Effect of salinity and inorganic nitrogen concentrations on nitrification and denitrification rates in intertidal sediments and rocky biofilms of the Douro River estuary, Portugal. Water Research 39: 1783-1794.

Magee TK, Ernst TL, Kentula ME & Dwire KA (1999) Floristic comparison of freshwater wetlands in an urbanizing environment. Wetlands 19: 517-534.

Magurran AE (1988) Ecological diversity and its measurement. Princeton University Press, Princeton, NJ, USA.

Mahlman JD (1997) Uncertainties in projections of human-caused climate warming. Science 278: 1416-1417.

Maitland PS & Hatton-Ellis TW (2003) Ecology of allis and twaite shad (*Alosa alosa* and *Alosa fallax*). Conserving Natura 2000 River Ecology Series No. 3. English Nature, Peterborough, UK.

Maitland PS, Boon PJ & McLusky DS (eds) (1994) The freshwaters of Scotland: a national resource of international significance. John Wiley, Chichester, UK.

Malamud-Roam FP & Ingram BL (2004) Late Holocene d13C and pollen records of paleosalinity from tidal marshes in the San Francisco Bay estuary, California. Quaternary Research 62: 134-145. USA.

Malecki RA, Blossey B, Hight S, Schroeder D, Kok LT & Coulson JR (1993) Biological control of purple loosestrife. Bioscience 43: 680-686.

Maloney T, Barrett JP, Barrett N, Gephard S, Hammerson GA, Kimball CH, Pfeiffer J, Proctor N & Stone JR (2001) Tidewaters of the Connecticut River: an explorer's guide to hidden coves and marshes. River's End Press, Essex, CT, USA.

MANHP (2005) Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife. http://www.mass.gov/dfwele/dfw/nhesp/nhcommfact.htm

Marble and Company (1998) Post-construction wetland monitoring report, Trenton Complex mitigation site, Mercer County, New Jersey. A.D. Marble and Company, Inc., Rosemont, PA, USA.

Marchand J (1993) The influence of seasonal salinity and turbidity maximum variations on the nursery function of the Loire estuary (France). Netherlands Journal of Aquatic Ecology 27: 427-436.

Marchand M, Quinlan M & Swarth CW (2004) Movement patterns and habitat use of eastern box turtles at the Jug Bay Wetlands Sanctuary, Maryland. In: Swarth CW, Roosenburg WM & Kiviat E (eds) Conservation and ecology of turtles of the Mid-Atlantic region, pp 55-62. Bibliomania, Salt Lake City, UT, USA.

Maris T, Cox T, Temmerman S, De Vleeschauwer P, Van Damme S, De Mulder T, Van den Bergh E & Meire P (2007) Tuning the tide: creating ecological conditions for tidal marsh development in a flood control area. Hydrobiologia 588: 31-43.

Maryland Department of Natural Resources (2003) Mute swans in Maryland: a statewide management plan. Maryland Department of Natural Resources, Wildlife and Heritage Service, USA. http://www.dnr.state.md.us/wildlife/msfinalexec.html (Viewed January 2008).

Maryland Sea Grant (2002) Invasive species in the Chesapeake Bay watershed: a workshop to develop regional invasive species management strategies. In: Moser FC (ed) Final report to the Chesapeake Bay Program Invasive Species Working Group. Sea Grant publication UM-SG-TS-2002-03. Maryland Sea Grant College Program, College Park, MD, USA.

Maser C & Sedell JR (1994) From the forest to the sea: the ecology of wood in streams, rivers, estuaries, and oceans. St. Lucie Press, Delray Beach, FL, USA.

Mason HL (1957) A flora of the marshes of California. University of California Press, Berkeley, CA, USA.

Massart J (1908) Essai du géographie botanique des districts littoraux et alluviaux de la Belgique. Recueil de l'Institut Botanique Léo Errera VII: 1g - 121e. Brussel, BEL.

Maurizi S & Puillon F (eds) (1992) Restoration of aquatic ecosystems. National Academy Press, Washington, DC.

McClelland JW & Valiela I (1998) Linking nitrogen in estuarine producers to land-derived sources. Limnology and Oceanography 43: 577-585.

McCormick J & Ashbaugh T (1972) Vegetation of a section of Oldmans Creek tidal marsh and related areas in Salem and Gloucester Counties, New Jersey. Bulletin of the New Jersey Academy of Science 17 (2): 31-37. USA.

McCormick J & Somes HA Jr (1982) The coastal wetlands of Maryland. Jack McCormick & Associates, Ind, Chevy Chase, MD, USA.

McGlynn CA (2006) The effects of two invasive plants on native communities in Hudson River freshwater tidal wetlands. PhD Dissertation. Stony Brook University, Stony Brook, New York. USA.

McGlynn CA & Ostfeld RS (2000) A study of the effects of invasive plant species on small mammals in Hudson River freshwater marshes. In: Waldman JR & Nieder WC (eds) Reports of the Tibor T. Polgar Fellowship Program 1999, pp. viii-1 to viii-21. Hudson River Foundation, New York, USA.

McIvor CC & Odum WE (1988) Food, predation risk, and microhabitat selection in a marsh fish assemblage. Ecology 69: 1341-1351.

McKee KL & Baldwin AH (1999) Disturbance regimes in North American wetlands. In: Walker LR (ed) Ecosystems of the world (16): ecosystems of disturbed ground, pp. 331-361. Elsevier, Amsterdam.

McKee KL & Mendelssohn IA (1989) Response of a freshwater marsh plant community to increased salinity and increased water level. Aquatic Botany 34: 301-316.

McKee KL & Patrick WH Jr (1988) The relationship of smooth cordgrass (*Spartina alterniflora*) to tide datums: a review. Estuaries 11: 143-151.

McKellar HN, Tufford DL, Alford MC, Saroprayogi P, Kelley BJ & Morris JT (2008) Tidal nitrogen exchanges across a freshwater wetland succession gradient in the upper Cooper River, South Carolina. Estuaries 30: 989-1006.

McKenzie MC, Miglarese JV, Anderson BS & Barclay LA (1980) Ecological characterization of the Sea Island coastal region of South Carolina and Georgia. Volume 2: Socioeconomic features of the characterization area, U.S. Fish and Wildlife Service FWS/OBS-79/41, Washington, DC.

McLusky DS (1987) Intertidal habitats and benthic macrofauna of the Forth estuary, Scotland. Proceedings Royal Society Edinbourg B 93: 389-400. UK.

McLusky DS (1993) Marine and estuarine gradients - an overview. Netherlands Journal of Aquatic Ecology 27: 489-493.

McLusky DS & Elliott M (2004) The estuarine ecosystem: ecology, threats and management. Oxford University Press, Oxford, UK.

McLusky DS & Elliott M (2007) Transitional waters: a new approach, semantics or just muddying the waters? Estuarine and Coastal Shelf Science 71: 359-363.

McLusky DS, Hull SC & Elliott M (1993) Variations in the intertidal and subtidal macrofauna and sediments along a salinity gradient in the upper Forth estuary. Netherlands Journal of Aquatic Ecology 27: 101-109.

McLusky DS, Deprez M, Elkaim B & Duhamel S (1994) The inner estuary of the Baie de Somme. Estuarine, Coastal and Shelf Science 38: 313-318.

McManus J (2005) Salinity and suspended matter variations in the Tay estuary. Continental Shelf Research 25: 729-747.

McVaugh R (1958) Flora of the Columbia County area, New York. New York State Museum Bulletins 360 & 360A. Albany, NY, USA.

Meade RH (1972) Transport and deposition of sediments in estuaries. The Geological Society of America - Memoir 133: 91-120.

Meador MR (1996) South Carolina wetland resources. In: Fretwell JD, Williams JS & Redman PJ (compilers) National water summary on wetland resources, pp. 345-349. United States Geological Survey Water-Supply Paper 2425, Washington, DC.

Meanley B (1965) Early-fall food and habitat of the sora in the Patuxent River Marsh, Maryland. Chesapeake Science 6: 235-237. USA.

Meanley B (1969) Natural history of the king rail. North American Fauna, No. 67, pp. 1-116. Bureau of Sports Fisheries and Wildlife, Washington, DC.

Meanley B (1993) The Patuxent River wildrice marsh. Privately published, USA.

Meanley B (1996) The Patuxent River wildrice marsh. Maryland National Capital Park and Planning Commission, Montgomery and Prince George's Counties, Maryland, Riverdale, MD, USA.

Meehl GA, Stocker TF, Collins WD, Friedlingstein P, Gaye AT, Gregory JM, Kitoh A, Knutti R, Murphy JM, Noda A, Raper SCB, Watterson IG, Weaver AJ & Zhao Z-C (2007) Global climate projections. In: Solomon S, Qin D, Manning M, Chen Z, Marquis M, Averyt KB, Tignor M & Miller HL (eds) Climate change 2007: the physical science basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, pp. 747-845. Cambridge University Press, Cambridge, UK, and New York.

Megonigal JP (1996) Methane production and oxidation in future climate. PhD Dissertation, Duke University, Durham, NC, USA.

Megonigal JP & Schlesinger WH (1997) Enhanced CH_4 emissions from a wetland soil exposed to elevated CO_2. Biogeochemistry 37:

Megonigal JP & Schlesinger WH (2002) Methane-limited methanotrophy in tidal freshwater swamps. Global Biogeochemical Cycles 16: 1088.

Megonigal JP, Hines ME & Visscher PT (2004) Anaerobic metabolism: linkages to trace gases and aerobic metabolism. In: Schlesinger WH (ed) Biogeochemistry, pp. 317-424. Elsevier-Pergamon, Oxford, UK.

Megonigal JP, Vann CD & Wolf AA (2005) Flooding constraints on tree (*Taxodium distichum*) and herb growth responses to elevated CO_2. Wetlands 25: 430-438.

Meijer R & Van der Nat J (1989) Bluethroat Cyanosylvia svecica saved by the Biesbosch? Limosa 62: 67-74. NL.

Meijer R & Weel B (2007) Profiteren de vogels van de Rode Lijst van de nieuwe Biesbosch? De Levende Natuur 108: 185-192. NL.

Meire P & Vincx M (eds) (1993) Marine and estuarine gradients. Netherlands Journal of Aquatic Ecology 27: 41-496.

Meire P & Van Damme S (eds) (2005) Special issue: Ecological structures and functions in the Scheldt estuary: from past to future. Hydrobiologia 540: 1- 278.

Meire P, Rossaert G, De Regge N, Ysebaert T & Kuijken E (1992) Het Schelde-estuarium: ecologische beschrijving en een visie op de toekomst. Rapport RUG-WWE 28, IN nr. A. 92.57. Gent, Brussel, BEL.

Meire P, Kuijken E & Ysebaert T (1993) The Zeeschelde an ecological impulse area? (in Dutch with English summary) HZ-gazet 6: 10-12. BEL.

Meire P, Van den Bergh E, Ysebaert T & Nijssen D (2002) Nature development along the river Scheldt: combining ecosystem functions in the Kruibeke-Bazel-Rupelmonde polder. In: Redecker B, Finck P, Härdtle W, Riecken U & Schröder E (eds) Pasture landscapes and nature conservation, pp. 173-185. Springer-Verlag, Berlin.

Meire P, Ysebaert T, Van Damme S, Van den Bergh E, Maris T & Struyf E (2005) The Scheldt estuary: a description of a changing ecosystem. Hydrobiologia 540: 1-11.

Melvin SM & Gibbs JP (1996) Sora *Porzana carolina*. Birds of North America 250: 1-20.

Menge BA & Olson AM (1990) Role of scale and environmental factors in regulation of community structure. Trends in Ecology and Evolution 5: 52-57.

Mennema J (1963) De Oude Maas – landschap, vegetatie en avifauna van een getijderivier. Natuur en Landschap 17: 66-84.

Mennema J (1967) *Leucojum aestivum* L. in België teruggevonden. Gorteria 3: 108. NL.

Merrill JZ (1999) Tidal freshwater marshes as nutrient sinks: particulate nutrient burial and denitrification. PhD Dissertation, University of Maryland. Cambridge, MD, USA.

Merrill JZ & Cornwell JC (2000) The role of oligohaline marshes in estuarine nutrient cycling. In: Weinstein MP & Kreeger DA (eds) Concepts and controversies in tidal marsh ecology, pp. 425-442. Kluwer Academic Publishers, Boston, MA, USA and Dordrecht, NL.

Meschkat A (1937) Abwasserbiologische Untersuchungen in einem Buhnenfeld unterhalb Hamburgs. Archiv für Hydrobiologie 31: 399-432.

Mesnage V, Bonneville S, Laignel B, Lefebvre D, Dupont JP & Mikes D (2002) Filling of a wetland (Seine estuary, France): natural eutrophication or anthropogenic process? A sedimentological and geochemical study of wetland organic sediments. Hydrobiologia 475/476: 423-435.

Mettam C (1994) Intertidal zonation of animals and plants on rocky shores in the Bristol Channel and Severn Estuary – the northern shores. Biological Journal of the Linnean Society 51: 123-147.

Michaelis H, Fock H, Grothahn M & Post D (1992) The status of the intertidal zoobenthic brackish-water species in the estuarie of the German Bight. Netherlands Journal of Aquatic Ecology 27: 71-496.

Michels FW (1973) De Brabantsche Biesbosch tussen Nieuwe Merwede en het Land van Heusden & Altena (schaal 1: 20 000). NV Waterwinningsbedrijf Brabantse Biesbosch, Rotterdam, NL.

Michener WK, Blood ER, Bildstein KL, Brinson MM & Gardner LR (1997) Climate change, hurricanes and tropical storms, and rising sea level in coastal wetlands. Ecological Applications 7: 770-801.

Middelburg JJ, Klaver G, Nieuwenhuize J, Markusse RM, Vlug T & Van Der Nat FJWA (1995) Nitrous oxide emissions from estuarine intertidal sediments. Hydrobiologia 311: 43-55.

Middelkoop H (2000) Heavy-metal pollution of the river Rhine and Meuse floodplains in the Netherlands. Netherlands Journal of Geosciences 79: 411-428.

Middleton AP (1984) Tobacco Coast: A maritime history of Chesapeake Bay in the colonial era. The Johns Hopkins University Press, Baltimore, MD, USA.

Middleton B (1999) Wetland restoration, flood pulsing, and disturbance dynamics. John Wiley and Sons, New York.

Mihocko G, Kiviat E, Schmidt RE, Findlay SEG, Nieder WC & Blair E (2003) Assessing ecological functions of Hudson River fresh-tidal marshes: reference data and a modified hydrogeomorphic (HGM) approach. New York State Department of Environmental Conservation, Hudson River Estuary Program, New Paltz, NY, USA.

Miller DE, Ladd J & Nieder WC (2006) Channel morphology in the Hudson River estuary: historical changes and opportunities for restoration. In: Waldman JR, Limburg KE & Strayer DL (eds) Hudson river fishes and their environment, pp. 29-37. American Fisheries Society Symposium No. 51. Bethesda, MD, USA.

Milliman JD & Meade RH (1983) World-wide delivery of river sediment to the oceans. Journal of Geology 91: 1-21.

Mills EL, Scheuerell MD, Carlton JT, Strayer DL (1997) Biological invasions in the Hudson River basin: an inventory and historical analysis. New York State Museum Circular 57: 1-51. USA.

Minchinton TE & Bertness MD (2003) Disturbance-mediated competition and the spread of *Phragmites australis* in a coastal marsh. Ecological Applications 13: 1400-1416.

Mitchell JC & Reay KK (1999) Atlas of Amphibians and Reptiles of Virginia. Special pub. no. 1, Virginia Department of Game and Inland Fisheries, Richmond, VA, USA.

Mitsch WJ & Gosselink JG (1993) Wetlands. Van Nostrand Reinhold, New York.

Mitsch WJ & Gosselink JG (2000) Wetlands. John Wiley & Sons Inc., New York.

Mitsch WJ & Gosselink JG (2007) Wetlands. John Wiley and Sons, Inc. Hoboken, NJ, USA.

Mitsch WJ, Day JW Jr, Gilliam JW, Groffman PM, Hey DL, Randall GW & Wang N (2001) Reducing nitrogen loading to the Gulf of Mexico from the Mississippi River basin: strategies to counter a persistent ecological problem. Bioscience 51: 373-388.

Modderman PJR (1953) Een neolitische woonplaats in de polder Vriesland onder Hekelingen (Eiland Putten, Zuid-Holland). Berichten R.O.B. (Proceedings State Service for Archeological Investigations in The Netherlands) 4(2): 1-26.

Mohd-Lokman H & Pethick JS (2001) Seasonality of sediment skewness as a geochronological tool for the Humber salt marshes, U.K. Wetlands Ecology and Management 9: 1-12.

Momber G (2000) Drowned and deserted: a submerged prehistoric landscape in the Solent, England. The International Journal of Nautical Archaeology 29: 86-99.

Momber G & Campbell C (2005) Stone Age stove under the Solent. International Journal of Nautical Archaeology 34: 148.

Monbet Y (1992) Control of phytoplankton biomass in estuaries: A comparative analysis of microtidal and macrotidal estuaries. Estuaries 15: 563-571.

Monroe MW& Kelly J (1992) State of the estuary: a report on conditions and problems in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. San Francisco Bay Estuary Project, Oakland, CA, USA.

Montz GN (1978) Vegetational characteristics of the Atchafalaya River delta. Louisiana Academy of Sciences 41: 71-84. USA.

Moon C & Dunstan WM (1990) Hydrodynamic trapping and the formation of the chlorophyll *a* peak in the turbid, very low salinity waters of estuaries. Journal of Plankton Research 12: 323-336.

Moonsammy RZ, Cohen DS & Hufford MT (1987) Living with the landscape. In: Moonsammy RZ, Cohen DS & Williams LE (eds) Pinelands folklife, pp. 65-230. Rutgers University Press, New Brunswick, NJ, USA.

Moorhead KK & Brinson MM (1995) Response of wetlands to rising sea level in the lower coastal plain of North Carolina. Ecological Applications 5: 261-271.

Mörner NA (1987) Models of global sea-level changes. In: Tooley M & Shennan I (eds) Sea-Level Changes, pp 332-355. Blackwell, Oxford, UK.

Morris JT (1986) Decompositon and nutrient dynamics of litter from four species of freshwater emergent macrophytes. Hydrobiologia 131: 215-224.

Morris JT & Bradley PM (1999) Effects of nutrient loading on carbon balance of coastal wetland sediments. Limnology and Oceanography 44: 699-702.

Morris JT, Sundareshwar PV, Nietch CT, Kjerfve B & Cahoon DR (2002) Responses of coastal wetlands to rising sea level. Ecology 83: 2869-2877.

Morris RKA (2007) English Nature's Estuaries Initiative: a review of its contribution to ICZM. Ocean & Coastal Management 51: 25-42

Morse JL, Megonigal JP & Walbridge MR (2004) Sediment nutrient accumulation and nutrient availability in two tidal freshwater marshes along the Mattaponi River, Virginia, USA. Biogeochemistry 69: 175-206.

Morton JM, Kirkpatrick RL, Vaughan MR & Stauffer DF (1989) Habitat use and movements of American black ducks in winter. Journal of Wildlife Management 53: 390-400.

Mörzer-Bruijns MF, Regteren-Altena CO & Butot LJM (1959) The Netherlands as an environment for land Mollusca. Basteria 23. NL.

Moser J (1981) The steel shot program in New York, 1976-1980: results of a four-year gizzard collection. Federal Aid in Fish and Wildlife Restoration Project W-39-R, Job X-2 New York State Department of Environmental Conservation, Albany, NY, USA.

Mounier RA (2003) Looking beneath the surface: the story of archaeology in New Jersey. Rutgers University Press, New Brunswick, NJ, USA.

Mouthon J (1999) Longitudinal organisation of the mollusc species in a theoretical French river. Hydrobiologia 390: 117-128.

Müller-Schwarze D & Sun L (2003) The beaver: natural history of a wetlands engineer. Cornell University Press, Ithaca, NY, USA.

Muller-Solger AB, Jassby AD & Muller-Navarra DC (2002) Nutritional quality of food resources for zooplankton (Daphnia) in a tidal freshwater system (Sacramento-San Joaquin River Delta). Limnology and Oceanography 47: 1468-1476.

Musick JA (1972) Herpetiles of the Maryland and Virginia coastal plain. In: Wass ML (ed) A checklist of the biota of lower Chesapeake Bay, pp. 213-223. Virginia Institute of Marine Science, Gloucester Point, VA, USA.

Muylaert K & Sabbe K (1999) Spring phytoplankton assemblages in and around the maximum turbidity zone of the estuaries of the Elbe (Germany), the Schelde (Belgium/The Netherlands) and the Gironde (France). Journal of Marine Systems 22: 133-149.

Muylaert K & Vyverman W (2006) Impact of a flood event on the planktonic food web of the Schelde estuary (Belgium) in spring 1998. Hydrobiologia 559: 385-394.

Muylaert K, Van Kerkvoorde A, Vyverman W & Sabbe K (1997) Structural characteristics of phytoplankton assemblages in tidal and non-tidal freshwater systems: a case-study from the Schelde basin. Freshwater Biology 38: 263-276.

Muylaert K, Sabbe K & Vyverman W (2000) Spatial and temporal dynamics of phytoplankton communities in a freshwater tidal estuary (Schelde, Belgium). Estuarine, Coastal and Shelf Science 50: 673-687.

Muylaert K, Van Wichelen J, Sabbe K & Vyverman W (2001) Short-term phytoplankton dynamics in a freshwater tidal estuary. Archiv für Hydrobiologie 150: 269-288. GER.

Muylaert K, Van Nieuwerburg L, Sabbe K & Vyverman W (2002) Microphytobenthos communities in the freshwater tidal to brackish reaches of the Schelde estuary (Belgium). Belgian Journal of Botany 135: 15-26.

Muylaert K, Tackx M & Vyverman W (2005) Phytoplankton growth rates in the freshwater tidal reaches of the Schelde estuary (Belgium) estimated using a simple light-limited primary production model. Hydrobiologia 540: 127-140.

Myers KW & Horton HF (1982) Temporal use of an Oregon estuary by hatchery and wild juvenile salmon. In: Kennedy VS (ed) Estuarine comparisons, pp. 377-391. Academic Press, New York.

Myrick RM & Leopold LB (1963) Hydraulic geometry of a small tidal estuary: physiographic and hydraulic studies of rivers. B1-B18. U.S. Geologic Survey, Washington, DC.

Najjar RG, Walker HA, Anderson PJ, Barron EJ, Bord RJ, Gibson JR, Kennedy VS, Knight CG, Megonigal JP, O'Connor RE, Polsky CD, Psuty NP, Richards BA, Sorenson LG, Steele EM & Swanson RS (2000) The potential impacts of climate change on the mid-Atlantic coastal region. Climate Research 14: 219-233.

NCDC (2004) Climate of 2003: 2003 in historical perspective. National Climate Data Center (http://www.ncdc.noaa.gov/oa/climate/research/2003/ann/ann03.html).

Nedwell DB & Raffaelli DG (eds) (1999) Estuaries. Advances in Ecological Research 29. Academic Press, London.

Neff KP (2002) Plant colonization and vegetation change in a restored tidal freshwater wetland in Washington, DC. MS Thesis, University of Maryland, College Park, MD, USA.

Neff KP & Baldwin AH (2005) Seed dispersal into wetlands: techniques and results for a restored tidal freshwater marsh. Wetlands 25: 392-404.

Neff KP, Rusello K & Baldwin AH (2009) Rapid seed bank development in restored tidal freshwater wetlands. Restoration Ecology 17, DOI: 10.1111/j.1526-100X.2008.00415.x.

NEMESIS (National Exotic Marine and Estuarine Species Information System) (2005) *Hydrilla verticillata*. (Viewed 30 July 2006 at http://invasions.si.edu/nemesis/)

Neubauer SC (2008) Contributions of mineral and organic components to tidal freshwater marsh accretion. Estuarine, Coastal and Shelf Science 78: 78-88.

Neubauer SC & Anderson IC (2003) Transport of dissolved inorganic carbon from a tidal freshwater marsh to the York River estuary. Limnology and Oceanography 48: 299-307.

Neubauer SC, Miller WD & Anderson IC (2000) Carbon cycling in a tidal freshwater marsh ecosystem: a carbon gas flux study. Marine Ecology Progress Series 199: 13-30.

Neubauer SC, Anderson IC, Constantine JA & Kuehl SA (2002) Sediment deposition and accretion in a mid-Atlantic (U.S.A.) tidal freshwater marsh. Estuarine, Coastal and Shelf Science 54: 713-727.

Neubauer SC, Anderson IC & Neikirk BB (2005a) Nitrogen cycling and ecosystem exchanges in a Virginia tidal freshwater marsh. Estuaries 28: 909-922.

Neubauer SC, Givler K, Valentine S & Megonigal JP (2005b) Seasonal patterns and plant-mediated controls of subsurface wetland biogeochemistry. Ecology 86: 3334-3344.

Neubecker J, Kohler S, Obst G & Jensen K (2005) Der Schierlings-Wasserfenchel – erfolgreiche Ansiedlung einer prioritären FFH-Art an der Elbe. Naturschutz und Landschaftsplanung 37: 248-255. GER.

New York Natural Heritage Program (1996) Stockport Flats: biodiversity inventory final report. New York Natural Heritage Program, Latham, NY, USA.

New!Delta (2007) Ports and nature, striking a new balance. Province of South Holland, The Hague, NL.

Newell SY & Porter D (2000) Microbial secondary production from salt marsh grass shoots, and its known and potential fates. In: Weinstein MP & Kreeger DA (eds) Concepts and controversies in tidal marsh ecology, pp. 159-186. Kluwer Academic Publishers, Boston, MA.

Newell SY, Arsuffi TL & Palm LA (1996) Misting and nitrogen fertilization of shoots of a saltmarsh grass: effects upon fungal decay of leaf blades. Oecologia 108: 495-502.

Newell SY, Blum LK, Crawford RE, Dai T & Dionne M (2000) Autumnal biomass and potential productivity of salt marsh fungi from 29 degrees to 43 degrees North latitude along the United States Atlantic coast. Applied and Environmental Microbiology 66: 180-185.

Neyland R (2007) The effects of Hurricane Rita on the aquatic vascular flora in a large fresh-water marsh in Cameron Parish, Louisiana. Castanea 72: 1-7. USA.

Ngai JT & Jefferies RL (2004) Nutrient limitation of plant growth and forage quality in Arctic coastal marshes. Journal of Ecology 92: 1001-1010.

Nichols TC (2003) Integrated damage management program reduces grazing impacts by resident Canada geese on wild rice. Proceedings 2003 International Canada Goose Symposium. Madison, WI, USA.

Nieder WC, Barnaba E, Findlay SEG, Hoskins S, Holochuck N & Blair EA (2004) Distribution and abundance of submerged aquatic vegetation and *Trapa natans* in the Hudson River estuary. Journal of Coastal Research 45: 150-161.

Nienhuis PH, Bakker JP, Grootjans AP, Gulati RD & De Jonge VN (2002) The state of the art of aquatic and semi-aquatic ecological restoration projects in the Netherlands. Hydrobiologia 478: 219-233.

Niering WA (1997) Tidal wetlands restoration and creation along the east coast of North America. In: Urbanska KM, Webb NR & Edwards PJ (eds) Restoration ecology and sustainable development, pp. 259-285. Cambridge University Press, Cambridge, UK.

Nietch CT (2000) Carbon biogeochemistry in tidal marshes of South Carolina: the effect of salinity and nutrient availability on marsh metabolism in estuaries with contrasting histories of disturbance and river influence. PhD Dissertation, University of South Carolina. Columbia, SC, USA.

NISIC (National Invasive Species Information Center) (2006) http://www.invasivespeciesinfo.gov (Viewed January 2008).

NOAA (1975) The coastline of the United States. Publication NOAA/PA 71046. U.S. Government Printing Office, Washington, DC.

NOAA (1988) Tide tables: high and low water predictions, west coast of North and South America. U.S. Dept of Commerce, Washington, DC.

NOAA (2007) NOAA Tides and currents: tide station locations and ranges (http://tidesandcurrents.noaa.gov/tides08/tab2ec2c.html#57).

Nolet BA & Rosell F (1998) Comeback of the beaver *Castor fiber*: An overview of old and new conservation problems. Biological Conservation 83: 165-173.

Nolet BA, Hoekstra A & Ottenheim MM (1994) Selective foraging on woody species by the beaver Castor fiber, and its impact on a riparian willow forest. Biological Conservation 70: 117-128.

Nolet B, Spitzen A, Van Leijsen J & Dijkstra V (2006) Bevers in de Biesbosch - Griendwerkers van de toekomst? Landschap 23: 171-180. NL.

Nordstrom KF & Roman CT (eds) (1996) Estuarine shores - evolution, environments and human alterations. John Wiley & Sons, Chichester, UK.

NWWG (National Wetlands Working Group) (1988) Wetlands of Canada ecological land classification series. No 24. Environment Canada, Ottawa, Ontario, and Polyscience Publications, Inc., Montreal, Quebec, Canada.

O'Shea ML & Brosnan TM (2000) Trends in indicators of eutrophication in Western Long Island Sound and the Hudson-Raritan Estuary. Estuaries 23: 877-901.

Odum EP (2000) Tidal Marshes as outwelling/pulsing systems. In: Weinstein MP & Kreeger DA (eds) Concepts and controversies in tidal marsh ecology, pp. 3-8. Kluwer Academic Publishers, Boston, MA, USA.

Odum EP, Birch JB & Cooley JL (1983) Comparison of giant cutgrass productivity in tidal and impounded marshes with special reference to tidal subsidy and waste assimilation. Estuaries 6: 88-94.

Odum WE (1988) Comparative ecology of tidal freshwater and salt marshes. Annual Review of Ecology and Systematics 19: 147-176.

Odum WE & Heywood MA (1978) Decomposition of intertidal freshwater marsh plants. In: Good RE, Whigham DF & Simpson RL (eds) Freshwater wetlands: ecological processes and management potential, pp. 89-98. Academic Press, New York.

Odum WE, Smith TJ III, Hoover JK & McIvor CC (1984) The ecology of tidal freshwater marshes of the United States east coast: a community profile. U.S. Fish and Wildlife Service, FWS/OBS-83/17, Washington, DC.

Odum WE, Rozas LP & McIvor CC (1987) A comparison of fish and invertebrate community composition in tidal freshwater and oligohaline marsh systems. In: Hook DD, McKee Jr WH, Smith HK, Gregory J, Burrell VG, DeVoe MR, Sojka RE, Gilbert S, Banks R, Stolzy LG, Brooks C, Matthews TD & Shear TH (eds) Ecology and management of wetlands, pp. 112-132. Croom Helm, London.

Odum WE, Odum EP & Odum HT (1995) Nature's pulsing paradigm. Estuaries 18: 547-555.

Oertling W (1992) Profil-Typen der Ufer-Vegetation der Unterelbe im Bereich und unterhalb der Mitteltidehochwasser-Linie. Institut für Angewandte Botanik der Universität Hamburg, Beiheft 3: 37-74. GER.

Officer CB (1976) Physical oceanography of estuaries (and associated coastal waters). John Wiley & Sons, New York.

Officer CB (1981) Physical dynamics of estuarine suspended sediments. Marine Geology 40: 1-14.

Officer CB & Ryther JH (1980) The possible importance of silicon in marine eutrophication. Marine Ecology Progress Series 3: 83–91.

O'Neil T (1949) The muskrat in the Louisiana coastal marshes. Wildlife and Fisheries Commission, New Orleans, LA, USA.

Orr M, Crooks S &Williams PB (2003) Will restored tidal marshes be sustainable? In: Brown LR (ed) Issues in San Francisco Estuary tidal wetlands restoration. San Francisco Estuary and Watershed Science 1(1), Article 1. Oakland, CA, USA. Electronic journal available at http://repositories.cdlib.org/jmie/sfews/vol1/iss1/art5.

Orson RA, Simpson RL & Good RE (1990) Rates of sediment accumulation in a tidal freshwater marsh. Journal of Sedimentary Petrology 60: 859-869.

Orson RA, Simpson RL & Good RE (1992) The paleoecological development of a late Holocene, tidal freshwater marsh of the upper Delaware River Estuary. Estuaries 15: 130-146.

Orson RA, Warren RS, Niering WN & Patten PV (eds) (1998) Research in New England marsh-estuarine ecosystems: directions and priorities into the next millennium. The Connecticut Sea Grant College Program. Groton, CT, USA.

Orth DJ (1967) Dictionary of Alaska place names. U.S. Geological Survey Paper 567. U.S. Government Printing Office, Washington, DC.

Orth RJ, Nowak JF, Anderson GF & Whiting JR (1996) Distribution of submerged aquatic vegetation in the Chesapeake Bay and tributaries and Chincoteague Bay - 1995. U.S. Environmental Protection Agency, Annapolis, MD, USA.

Orton GJ & Reading HG (1993) Variability of deltaic processes in terms of sediment supply, with particular emphasis on grain-size. Sedimentology 40: 475-512.

Osborn TJ & Briffa KR (2006) The spatial extent of 20th-century warmth in the context of the past 1200 years. Science 311: 841-844.

Osgood DT, Yozzo DJ, Chambers RM, Jacobson D, Hoffman T & Wnek J (2003) Tidal hydrology and habitat utilization by resident nekton in *Phragmites* and non-*Phragmites* wetlands. Estuaries 26: 522-533.

Osgood DT, Yozzo DJ, Chambers RM, Pianka S, Lewis J & LePage C (2007) Patterns of habitat utilitization by resident nekton in *Phragmites* and *Typha* marshes on the Hudson River estuary, New York. In: Waldman J, Limburg K & Strayer D (eds) Hudson River fishes and their environment 51: 151-173. American Fisheries Society Symposium, Bethesda, MD, USA.

O'Sullivan A (2001) Archaeology, foragers, farmers and fishers in a coastal landscape; an intertidal archaeological survey of the Shannon estuary. Discovery Programme Monograph 5, Royal Irish Academy Publication.

Otto S, Groffman PM, Findlay SEG & Arreola AE (1999) Invasive plant species and microbial processes in a tidal freshwater marsh. Journal Environmental Quality 28: 1252-1257.

Paavola M, Olenin S & Leppaköski E (2005) Are invasive species most successful in habitats of low native species richness across European brackish water seas? Estuarine, Coastal and Shelf Science 64: 738-750.

Page GW, Stenzel LE & Wolfe CM (1979) Aspects of the occurrence of shorebirds on a central California estuary. Studies in Avian Biology 2: 15-32. USA.

Pahl JW (2002) The combined effects of salinity and sulfide on the growth and physiology of the freshwater marsh plant *Panicum hemitomon* J.A. Schultes. PhD Dissertation, Louisiana State University, Baton Rouge, LA, USA.

Paludan C & Morris JT (1999) Distribution and speciation of phosphorus along a salinity gradient in intertidal marsh sediments. Biogeochemistry 45: 197-221.

Parfitt SA, Barendregt RW, Breda M, Candy I, Collins MJ, Coope GR, Durbidge P, Field MH, Lee JR, Lister M, Mutch R, Penkman KEH, Preece RC, Rose J, Stringer CB, Symmons R, Whittaker JE, Wymer JJ & Stuart AJ (2005). The earliest record of human activity in northern Europe. Nature 438: 1008-1012.

Park RA, Armentano TV & Cloonan CL (1986) Predicting the effects of sea level rise on coastal wetlands. In: Titus JG (ed) Effects of changes in stratospheric ozone and global climate, Vol. 4: Sea level rise, pp. 129-152. U.S. Environmental Protection Agency, Washington, DC.

Park RA, Trehan MS, Mausel PW & Howe RC (1989) Coastal wetlands in the twenty first century: profound alterations due to rising sea level. In: Wetlands, concerns and successes, pp. 71-80. Proceedings of symposium sponsored by American Water Resources Association, Bethesda, MD.Park RA, Lee JK, Mausel PW & Howe RC (1991) Using remote sensing for modeling the impacts of sea level rise. World Resources Review 3: 184-220.

Parker VT & Leck MA (1985) Relationships of seed banks to plant distribution patterns in a freshwater tidal wetland. American Journal of Botany 72: 161-174.

Pasternack GB (1998) Physical dynamics of tidal freshwater delta evolution. PhD Dissertation, The Johns Hopkins University, Baltimore, MD, USA.

Pasternack GB (2001) Animal response to river evolution in the tidal freshwater zone. In: Dorava JM, Montgomery DR, Palcsak BB & Fitzpatrick FA (eds) Geomorphic processes and riverine habitat, pp.139-157. American Geophysical Union, Washington, DC.

Pasternack GB & Brush GS (1998). Sedimentation cycles in a river-mouth tidal freshwater marsh. Estuaries 21: 407-415.

Pasternack GB & Brush GS (2001) Seasonal variations in sedimentation and organic content in five plant associations on a Chesapeake Bay tidal freshwater delta. Estuarine, Coastal and Shelf Science 53: 93-106.

Pasternack GB & Brush GS (2002) Biogeomorphic controls on sedimentation and substrate on a vegetated tidal freshwater delta in upper Chesapeake Bay. Geomorphology 43: 293-311.

Pasternack GB & Hinnov LA (2003) Hydrometeorological controls on water level in a vegetated Chesapeake Bay tidal freshwater delta. Estuarine, Coastal and Shelf Science 58: 373-393.

Pasternack GB, Hilgartner WB & Brush GS (2000) Biogeomorphology of an upper Chesapeake Bay river-mouth tidal freshwater marsh. Wetlands 20: 520-537.

Pasternack GB, Brush GS & Hilgartner WB (2001) Impact of historic land-use change on sediment delivery to an estuarine delta. Earth Surface Processes and Landforms 26: 409-427.

Paul MM, Krafft CC & Hammerschlag RS (2006) Avian comparisons between Kingman and Kenilworth Marshes, Final Report 2001-2004. U.S. Geological Survey Patuxent Wildlife Research Center, Beltsville, MD, USA.

Pearlstine LG, Kitchens WM, Latham PJ & Bartleson RD (1993) Tide gate influences on a tidal marsh. Water Resources Bulletin 29: 1009-1019.

Pelegri SP & Blackburn TH (1995) Effects of *Tubifex tubifex* (Oligochaeta: Tubificidae) on N-mineralisation in freshwater sediments, measured with ^{15}N isotopes. Aquatic Microbial Ecology 9: 289-294.

Peluso M, Munnia A, Bolognesi C & Parodi S (1998) ^{32}P-postlabeling detection of DNA adducts in mice treated with the herbicide Roundup. Environmental and Molecular Mutagenesis 31: 55-59.

Penfound WT & Hathaway ES (1938) Plant communities in the marshlands of southeastern Louisiana. Ecological Monographs 8: 1-56.

Perham C (1980) The long tidal river. EPA Journal 6: 11-15. USA.

Perillo GME, Piccolo MC & Pino-Quivira M (eds) (1999) Estuaries of South America, their geomorphology and dynamics. SpringerVerlag, Berlin, GER.

Perls J (1999) Paths along the Hudson: a guide to walking and biking. Rutgers University Press, New Brunswick, NJ, USA.

Perry JE (1994) Temporal and spatial changes in plant diversity in Chesapeake Bay tidal wetlands: management implications. In: Lynch MP & Crowder B (eds) Organizing for the coast: proceedings of the 13th International Conference of the Coastal Society, pp. 619-625. Gloucester, MA, USA.

Perry JE (1997) Natural heritage resources fact sheet: tidal freshwater marshes. Department Conservation & Recreation, Richmond, VA, USA.

Perry JE (2005) Vegetation assessments of a created forested tidal wetland mitigation site in Charles City, Virginia. Annual Report, Virginia Polytechnic Institute and University, Blacksburg, VA, USA.

Perry JE & Atkinson RA (1997). Plant diversity along a salinity gradient of four marshes on the York and Pamunkey rivers in Virginia. Castanea 62: 112-118. USA.

Perry JE & Atkinson RA (2007) York River tidal marshes. In: Moore KA & Reay WG (eds) A site profile of the Chesapeake Bay National Estuarine Research Reserve, Virginia. VIMS Special Scientific Report No. 149. The Virginia Institute of Marine Science, College of William and Mary, Gloucester Point, VA, USA.

Perry JE & Hershner CH (1999) Temporal changes in the vegetation pattern in a tidal freshwater marsh. Wetlands 19: 90-99.

Perry MC & Deller AS (1996) Review of factors affecting the distribution and abundance of waterfowl in shallow-water habitats of Chesapeake Bay. Estuaries 19: 272-278.

Perry MC & Uhler FM (1981) Asiatic clam (*Corbicula manilensis*) and other foods used by waterfowl in the James River, Virginia. Estuaries 4: 229-233.

Petermeier A, Schöll F & Tittizer Th (1994) Historische Entwicklung der aquatischen Lebensgemeinschaft (Zoobenthos und Fischfauna) im deutschen Abschnitt der Elbe. Bundesanstalt für Gewässerkunde. 0832. Koblenz [unveröffentlichtes Gutachten], GER.

Petermeier A, Schöll F & Tittizer Th (1996) Die ökologische und biologische Entwicklung der deutschen Elbe. Ein Literaturbericht. Lauterbornia 24: 1-95. Dinkelscherben, GER.

Peterson JE (2003) Factors regulating expression of seed banks in vegetation of tidal freshwater wetlands. MS Thesis, University of Maryland, College Park, MD, USA.

Peterson JE & Baldwin AH (2004a) Variation in wetland seed banks across a tidal freshwater landscape. American Journal of Botany 91: 1251-1259.

Peterson JE & Baldwin AH (2004b) Seedling emergence from seed banks of tidal freshwater wetlands: response to inundation and sedimentation. Aquatic Botany 78: 243-254.

Pethick J (2002) Estuarine and tidal wetland restoration in the United Kingdom: policy versus practice. Restoration Ecology 10: 431-437.

Petzelberger BEM (2000) Coastal development and human activities in NW Germany. In: Pye K & Allen JRL (eds) Coastal and estuarine environments: sedimentology, geomorphology and geoarchaeology. Special Publications 175: 365-376. Geological Society, London.

Pezeshki SR, DeLaune RD & Patrick WH Jr (1990) Flooding and salt water intrusion: Potential effects on survival and productivity of wetland forests along the U.S. Gulf Coast. Forest Ecology and Management 33/34: 287-301.

Pezeshki SR, DeLaune RD & Pan SZ (1991) Relationship of soil hydrogen sulfide level to net carbon assimilation of *Panicum hemitomon* and *Spartina patens*. Vegetatio 95: 156-166.

Pfannkuche O, Jelinek H & Hartwig E (1975) Zur Fauna eines Süßwasserwattes im Elbe-Aestuar. Archiv für Hydrobiologie 76: 475-498. GER.

Phelps HL (1994) The Asiatic clam (*Corbicula fluminea*) invasion and system-level ecological change in the Potomac River estuary near Washington, DC. Estuaries 17: 614-621.

Philipp KR & Field RT (2005) *Phragmites australis* expansion in Delaware Bay salt marshes. Ecological Engineering 25: 275-291.

Phillip M (2005) Decker Island wildlife area: enhancing delta wetlands one phase at a time. Outdoor California, March-April 2005: 4-8. USA. Accessed from http://www.dfg.ca.gov/ocal.

Piavis PG (1991) Yellow perch. In: Funderbunk SL, Jordan SJ, Mihursky JA & Riley D (eds) Habitat requirements for Chesapeake Bay living resources, pp 14-1 to 14-15. National Oceanic and Atmospheric Administration, Annapolis, MD, USA.

Piccolo MC & Perillo GME (1999) The Argentina estuaries: a review. In: Perillo GME, Piccolo MC & Pino-Quivira M (eds) Estuaries of South America: their geomorphology and dynamics, pp. 101-132. SpringerVerlag, Berlin.

Pickett J, McKellar H & Kelley J (1989) Plant community composition, leaf mortality, and aboveground production in a tidal freshwater marsh. In: Sharitz RR & Gibbons JW (eds) Freshwater Wetlands and Wildlife, pp. 351-364. Proceedings of symposium at Charlestown, South Carolina, 24-27 March 1986. U.S. Department of Energy, National Technical Information Service. Springfield, VA, USA.

Pimentel D, Lach L, Zuniga R & Morrison D (2000) Environmental and economic costs of nonindigenous species in the United States. BioScience 50: 53-65.

Pinder DA & Witherick ME (1990) Port industrialization, urbanization and wetland loss. In: Williams M (ed) Wetlands - a threatened landscape, pp. 234-266. Basil Blackwell, Oxford, UK.

Platt T, Lewis M & Geider R (1984) Thermodynamics of the pelagic ecosystem: elementary closure conditions for biological production in the open ocean. In: Fasham MJR (ed) Flows of energy and materials in marine ecosystems, pp. 48-84. Plenum Press, New York.

Platvoet D & Pinkster S (1995) Changes in the Amphipod fauna (Crustacea) of the Rhine, Meuse and Scheldt estuary due to the 'Delta Plan' coastal engineering works. Netherlands Journal of Aquatic Ecology 29: 5-30.

Pleijte M & During R (2006) Ruimte voor alternatieven? - Ruimte voor de rivier in de Noordwaard. Landschap 23: 187-191. NL.

Pomfret JR, Elliott M, O'Reilly MG & Phillips S (1991) Spatial and temporal patterns in the fish communities in two UK North Sea estuaries. In: Elliott M & Ducrotoy JP (eds) Estuaries and coasts: spatial and temporal intercomparisons, pp. 277-284. Olson & Olson, Fredensborg, DK.

Pons LJ & Zonneveld IS (1965) Soil ripening and soil classification, initial soil formation in alluvial deposits and a classification of the resulting soils. Publication No. 13 of International Institute for Land reclamation and Improvement. Veenman & Zonen, Wageningen, NL.

Poorter H (1993) Interspecific variation in the growth-response of plants to an elevated ambient CO_2 concentration. Vegetatio 104: 77-97.

Posey MH, Wigand C & Stevenson JC (1993) Effects of an introduced plant, *Hydrilla verticillata*, on benthic communities in the upper Chesapeake Bay. Estuarine, Coastal and Shelf Science 37: 539-555.

Post RA (1996) Functional profile of black spruce wetlands in Alaska. Alaska Department of Fish and Game, Fairbanks, AK, USA.

Posthoorn R (ed) (2000) Ontwikkelingsvisie Tiengemeten – eiland van wildernis, weelde en weemoed. RIZA rapport 2000.041. Lelystad, NL.

Postma H & Kalle K (1955) Die Entstehung von Trübungszonen im Unterlauf der Flüsse, speziell im Hinblick auf die Verhältnisse in der Unterelbe. Deutsche Hydrographische Zeitschrift 8: 138-144. GER.

Pratolongo P, Kandus P & Brinson MM (2007) Net aboveground primary production and soil properties of floating and attached freshwater tidal marshes in the Rio del al Plata estuary, Argentina. Estuaries and Coasts 30: 618-626.

Preisinger H (1991) Strukturanalyse und Zeigerwert der Auen- und Ufervegetation im Hamburger Hafen- und Hafenrandgebiet. Dissertationes Botanicae Band 174. Cramer, Berlin.

Prevost MB (1986) Management of plant communities for waterfowl in coastal South Carolina. Symposium on waterfowl and wetlands management in the coastal zone of the Atlantic flyway. Wilmington, Delaware, Delaware Department of Natural Resources and Environmental Control, Division of Fish and Wildlife and Delaware Coastal Management Program. Dover, DE, USA.

Pritchard DW (1967) What is an estuary: a physical viewpoint. American Association for the Advancement of Science 83: 3-5.

Puterbaugh P (1997) Southeastern wetlands: a guide to selected sites in Georgia, North Carolina, South Carolina, Tennessee, and Kentucky. Terrene Institute, Alexandria, VA, USA.

PWA (2006) Dutch Slough tidal marsh restoration conceptual plan and feasibility report. PWA Ref. No. 1714. Phillip Williams and Associates, Ltd., San Francisco, CA, USA. Accessed from http://www.dutchslough.org/Documents.

Quigley DTG, Igoe F & O'Connor W (2004) The European smelt *Osmerus eperlanus* L. in Ireland: general biology, ecology, distribution and status with conservation recommendations. Biology and Environment: Proceedings of the Royal Irish Academy 104B (3): 57-66.

Quigley PA (2001) Wetlands monitoring report, Henderson freshwater tidal wetland restoration, John Heinz National Wildlife Refuge, Monitoring Year 2000. Patricia Ann Quigley, Inc., Norristown, PA, USA.

Quinn JR (1997) Fields of sun and grass: an artist's journal of the New Jersey Meadowlands. Rutgers University Press, New Brunswick, NJ, USA.

Raabe EW (1986) Die Gliederung der Ufervegetation der Elbe unterhalb Hamburg. Mitteilungen Natur- und Umweltschutz Hamburg 2: 117-141. GER.

Rabalais NN, Turner RE, Justic' D, Dortsch Q, Wiseman Jr. WJ & Sen Gupta B (1996) Nutrient changes in the Mississippi River and system responses on the adjacent continental shelf. Estuaries 19: 386–407.

Raichel DL, Able KW & Hartman JM (2003) The influence of *Phragmites* (common reed) on the distribution, abundance, and potential prey of a resident marsh fish in the Hackensack Meadowlands, New Jersey. Estuaries 26: 511-521.

Rapp JM, Fugler M, Armbruster CK & Clark NS (2001) Atchafalaya sediment delivery AT-02 progress report No. 1. Monitoring Series No. AT-02-MSPR-0599-1. Coastal Restoration Division, Louisiana Department of Natural Resources, Baton Rouge, LA, USA. Accessed from http://lacoast.gov.

Raven PH & Thomas JH (1970) *Iris pseudacorus* in western North America. Madroño 20: 390-391. USA.

Raynie RC & Visser JM (2002) CWPPRA adaptive management review final report. Coastal Restoration Division, Louisiana Department of Natural Resources, Baton Rouge, LA, USA.

Redeke HC (1941) De visschen van Nederland. Sijthoff, Leiden, NL.

Reed DJ (1989) Patterns of sediment deposition in subsiding coastal salt marshes, Terrebonne Bay, Louisiana: the role of winter storms. Estuaries 12: 222-227.

Reed DJ (ed) (1995) Status and historical trends of hydrologic modification, reduction in sediment availability, and habitat loss/modification in the Barataria and Terrebonne estuarine system. Barataria-Terrebonne National Estuary Program, Thibodaux, LA, USA.

Reed DJ (2002) Understanding tidal marsh sedimentation in the Sacramento-San Joaquin Delta, California. Journal of Coastal Research (Special Issue) 36: 605-611.

Rehbehn R, Schuchardt B, Schirmer M & Kirst GO (1993) The distribution of *Actinocyclus normanii* (Bacillariophyceae) in estuaries: field observations and laboratory investigations. Netherlands Journal of Aquatic Ecology 27: 205-214.

Rejmanek M, Sasser CE & Peterson GW (1988) Hurricane-induced sediment deposition in a Gulf coast Marsh. Estuarine, Coastal and Shelf Science 27: 217-222.

Remane A (1934) Die Brackwasserfauna. Zoologischer Anzeiger (Supplement) 7: 34-74. GER.

Renz MJ (2002) Biology, ecology and control of perennial pepperweed (*Lepidium latifolium* L.). PhD Dissertation, University of California, Davis, CA, USA.

Retière C (1994) Tidal power and the aquatic environment of La Rance. Biological Journal of the Linnean Society 51: 25-36.

Reynolds M (1991) Ecology of the marsh snail, *Oxyloma effusa*. Technical report of the Jug Bay Wetlands Sanctuary, Lothian, MD, USA.

Rheinhardt RD (1991) Vegetation ecology of tidal freshwater swamps in lower Chesapeake Bay, USA. PhD Dissertation, School of Marine Science, College of William and Mary, Gloucester Point, VA, USA.

Rheinhardt RD (1992) Multivariate analysis of vegetation patterns in tidal freshwater swamps of lower Chesapeake Bay, USA. Bulletin of the Torrey Botanical Club 119: 193-208. USA.

Rheinhardt RD & Hershner C (1992) The relationship of below-ground hydrology to canopy composition in five tidal freshwater swamps. Wetlands 12: 208-216.

Rhyne N (1994) Touring the coastal Georgia back roads. John F. Blair Publisher, Winston-Salem, NC, USA.

Rice D, Rooth J & Stevenson JC (2000) Colonization and expansion of *Phragmites australis* in upper Chesapeake Bay tidal marshes. Wetlands 20: 280-299.

Rich FJ (1984) The development of three tree islands in the Okefenokee Swamp as determined by palynostratigraphy and peat petrography. In: Cohen AD, Casagrande DJ, Andrejko MJ & Best GR (eds) The Okefenokee Swamp: its natural history, geology, and geochemistry, pp. 444-455. Wetland Surveys, Los Alamos, NM, USA.

Richard E & Schmidt RE (1987) Feeding ecology of the banded killifish (*Fundulus diaphanus*) at Tivoli North Bay, Hudson River, New York. In: Blair EA & Cooper JC (eds) Polgar Fellowship Reports of the Hudson River National Estuarine Research Reserve, 1986, pp ii-1-20. New York State Department of Environmental Conservation, Annandale, NY, USA.

Richard S, Moslemi S, Sipahutar H, Benachour N & Seralini GE (2005) Differential effects of glyphosate and Roundup on human placental cells and aromatase. Environmental Health Perspectives 113: 716-720.

Richardson K (1997) Harmful or exceptional phytoplankton blooms in the marine ecosystem. Advances in Marine Biology 31: 301–385.

Richardson K, Beardall J & Raven JA (1983) Adaptation of unicellular algae to irradiance- an analysis of strategies. New Phytologist 93: 157-191.

Ridgley MA & Rijsberman FR (1994) Multicriterion analysis and the evaluation of restoration policies for a Rhine estuary. Socio-Economic Planning Science 28: 19-32.

Riedel-Lorjé JC & Gaumert T (1982) A century of Elbe research – Hydrobiological conditions and fish populations from 1842 to 1943 under the influence of construction projects and sewage discharge (in German). Archiv für Hydrobiologie, Suppl. 61: 317-376.

Rignot E & Kanagaratnam P (2006) Changes in velocity structure of the Greenland Ice Sheet. Science 311: 986-990.

Ritter DF (1986) Process geomorphology. Wm. C. Brown Publishers, Dubuque, IA, USA.

Rolinski S (1999) On the dynamics of suspended matter transport in the tidal river Elbe: description and results of a Lagrangian model. Journal of Geophysical Research 104: 26.043-26.057.

Rolinski S & Eichweber G (2000) Deformations of the tidal wave in the Elbe estuary and their effect on suspended particulate matter dynamics. Physical Chemistry of the Earth 25: 355-358.

Rooth JE & Stevenson JC (2000) Sediment deposition patterns in *Phragmites australis* communities: implications for coastal areas threatened by rising sea-level. Wetland Ecology and Management 8: 173-183.

Rooth JE, Stevenson JC & Cornwell JC (2003) Increased sediment accretion rates following invasion by *Phragmites australis*: the role of litter. Estuaries 26: 475-483.

Rose PM & Scott DA (1997) Waterfowl Population Estimates. Wetlands International Publication 44. Wageningen, NL.

Roßbach B, Sievers H, Hammen A & Doerffer R (1997) Luftbildauswertung "Tideröhrichte an der Unterelbe". Report GKSS, Geesthacht, GER.

Rozas LP & Odum WE (1987a) Fish and macrocrustacean use of submerged plant beds in tidal freshwater marsh creeks. Marine Ecology-Progress Series 38: 101-108.

Rozas LP & Odum WE (1987b) Use of tidal freshwater marshes by fishes and macrofaunal crustaceans along a marsh stream-order gradient. Estuaries 10: 36-43.

Rozycki C & Kiviat E (1996) A low density, tidal marsh, painted turtle population. In: Waldman JR, Nieder WC & Blair EA (eds) Reports of the Tibor T. Polgar Fellowship Program, 1995, pp. v-1 to v-35. Hudson River Foundation, New York.

Rusch DH, Malecki RA & Trost RE (1995) Canada Geese in North America. In: Laroe ET, Farris GS, Puckett CE, Doran PD & Mae MJ (eds) Our living resources, pp. 26-28. US Department of the Interior, National Biological Survey, Washington, DC.

Russell EWB (1986) Interpretation of a palynological core from the floodplain of the Abbott Farm National Historic Landmark. Trenton Complex Archaeology: report B. Archaeological data recovery I-295, and wetlands area interchange area B (28 Me 1-B), pp. A1-6. Louis Berger & Associates, Inc., The Cultural Resource Group. Trenton, NJ, USA.

Russell RJ (1942) Flotant. Geographical Review 32: 74-98. USA.

RWS-ZL (1998) Hoofdrapport MER Beheer Haringvlietsluizen – over de grens van zout naar zoet. Report RWS apv 98/102. Rijkswaterstaat Directie Zuid-Holland, Rotterdam, NL.

Rybicki NB & Landwehr JM (2007) Long-term changes in abundance and diversity of macrophyte and waterfowl populations in an estuary with exotic macrophytes and improving water quality. Limnology and Oceanography 52: 1195-1207.

Rysgaard S, Thastum P, Dalsgaard T, Christensen PB & Sloth NP (1999) Effects of salinity on NH_4^+ adsorption capacity, nitrification, and denitrification in Danish estuarine sediments. Estuaries 22: 21-31.

Ryther JH & Dunstan WM (1971) Nitrogen, phosphorus, and eutrophication in the coastal environment. Science 171: 1008-1013.

Sager LL (1993) A recreational development site plan for the Tivoli Bays Hudson River National Estuarine Research Reserve. MS Thesis, State University of New York College of Environmental Science and Forestry, Syracuse, NY, USA.

Salomone P, Morstad S, Sands T, Westing C, Baker T & Brazil C (2007) 2006 Bristol Bay area annual management report. Fishery Management Report No. 07-22. Alaska Department of Fish and Game, Anchorage, AK, USA.

Salomons W, Schwedhelm E, Schoer J & Knauth H-D (1988) Natural tracers to determine the origin of sediments and suspended matter from the Elbe estuary. Water Science and Technology 20: 89-102.

Saltonstall K (2002) Cryptic invasion by a non-native genotype of the common reed, *Phragmites australis*, into North America. Proceedings of the National Academy of Sciences USA 99: 2445-2449.

Saltonstall K (2003) Genetic variation among North American populations of *Phragmites australis*: implications for management. Estuaries 26: 444-451.

Sanderson GC & Bellrose FC (1986) A review of the problem of lead poisoning in waterfowl. Illinois Natural History Survey, Champaign, Illinois. Special Publication 4. Jamestown ND: Northern Prairie Wildlife Research Center Online, USA. http://www.npwrc.usgs.gov/resource/birds/pbpoison/index.htm (Viewed January 2008).

Sandifer PA, Miglarese JV, Calder DR, Manzi JJ & Barclay LA (1980) Ecological characterization of the Sea Island coastal region of South Carolina and Georgia. Vol. iii: Biological features of the characterization area. US Fish Wildlife Biological Service Program, FWS/OBS-79/42. Washington, DC.

Santín C, Otero XL, Fernández S, González-Pérez M & Alvarez MA (2007) Variations of organic carbon stock in reclaimed estuarine soils (Villaviciosa estuary, NW Spain). Science of the Total Environment 378: 138-142.

Saris F (1987) Patroon en proces in een zoetwater(getijden)delta. Rapport SCMO, Delft, NL.

Saris F & Sierdsema H (1987) Avifauna van de Biesbosch - Een beschrijving van de veranderingen en de dynamiek van een unieke vogelgemeenschap. Rapport SBB, Tilburg, NL.

Sasser CE & Gosselink JG (1984) Vegetation and primary production in a floating freshwater marsh in Louisiana. Aquatic Botany 20: 245-255.

Sasser CE, Gosselink JG & Shaffer GP (1991) Distribution of nitrogen and phosphorus in a Louisiana freshwater floating marsh. Aquatic Botany 41: 317-331.

Sasser CE, Swenson EM, Evers DE, Visser JM, Holm GO Jr & Gosselink JG (1994) Floating marshes in the Barataria and Terrebonne basins, Louisiana. Louisiana State University, Coastal Ecology Institute, Baton Rouge, prepared for U.S. Environmental Protection Agency, Dallas, TX, USA.

Sasser CE, Gosselink JG, Swenson EM & Evers DE (1995a) Hydrologic, vegetation, and substrate characteristics of floating

marshes in sediment-rich wetlands of the Mississippi River delta plain, Louisiana, USA. Wetlands Ecology and Management 3: 171-187.

Sasser CE, Visser JM, Evers DE & Gosselink JG (1995b) The role of environmental variables in interannual variation in species composition and biomass in a sub-tropical minerotrophic floating marsh. Canadian Journal of Botany 73: 413–424.

Sasser CE, Gosselink JG, Swenson EM, Swarzenski CM & Leibowitz NC (1996) Vegetation, substrate and hydrology in floating marshes in the Mississippi river delta plain wetlands, USA. Vegetatio 122: 129-142.

Sasser CE, Holm GO Jr, Visser JM & Swenson EM (2004) Thin-mat floating marsh enhancement demonstration project TE-36. School of the Coast and Environment, Louisiana State University. Baton Rouge, LA, USA.

Saunders CJ, Megonigal JP & Reynolds JF (2006) Comparison of belowground biomass in C_3- and C_4-dominated mixed communities in a Chesapeake Bay brackish marsh. Plant and Soil 280: 305-322.

Savenije HHG (2005) Salinity and tides in alluvial estuaries. Elsevier, Amsterdam.

Schaminee JHJ, Weeda EJ & Westhoff V (1995) De Vegetatie van Nederland – deel 2 – Plantengemeenschappen van wateren, moerassen en natte heiden. Opulus Press, Uppsala, Sweden.

Schindler PW (1983) Metal ions in natural aquatic systems. Inorganica Chimica Acta 79: 32-33.

Schlekat CE, McGee BL, Boward DM, Reinharz E, Velinsky DJ & Wade TI (1994) Tidal river sediments in the Washington, DC. area. III. Biological effects associated with sediment contamination. Estuaries 17: 334-344.

Schlesinger WH (1978) Community structure, dynamics, and nutrient cycling in the Okefenokee cypress swamp-forest. Ecological Monographs 48: 43-56.

Schlesinger WH (1997) Biogeochemistry: an analysis of global change. Academic Press, San Diego, CA, USA.

Schmidt KA (1986) The life history of the chrysomelid beetle *Pyrrhalta nymphaeae* (Galerucinae) on water chestnut, *Trapa natans* (Hydrocariaceae), in Tivoli South Bay, Hudson River, NY. In: Blair EA & Waldman JR (eds) Polgar Fellowship Reports of the Hudson River National Estuarine Sanctuary Program, 1985, pp. v-1 to v-32. New York State Department of Environmental Conservation, Annandale, NY, USA.

Schmidt RE & Cooper S (1996) A catalog of barriers to upstream movement of migratory fishes in Hudson River tributaries. Report to the Hudson River Foundation, New York, Hudsonia Ltd., Annandale, NY, USA.

Schneider DW (1996) Effects of European settlement and land use on regional patterns of similarity among Chesapeake forests. Bulletin of the Torrey Botanical Club 123**:** 233-239. USA.

Schoellhamer DH (2001) Influence of salinity, bottom topography, and tides on locations of estuarine turbidity maxima in northern San Francisco Bay. In: McAnally WH & Mehta AJ (eds) Coastal and estuarine fine sediment transport processes, pp. 343-357. Elsevier Science, Amsterdam, NL.

Scholle J, Schuchardt B, Schulze S & Veckenstedt V (2007) Situation of the smelt (Osmerus eperlanus) in the Ems estuary with regard to the aspects of spawning grounds and recruitment. Bioconsult, Bremen, GER.

Schröder U (2007) Aktuelle und historische Röhrichtentwicklung an Unter- und Außenelbe. BFG Veranstaltungen 2: 20-30. GER.

Schubel J & Carter HH (1984) The estuary as a filter for fine grained, suspended sediment. In: Kennedy VS (ed) The estuary as a filter, pp. 81-105. Academic Press Inc., New York.

Schuchardt B (1995) Die Veränderung des Tidehubs in den inneren Ästuaren von Eider, Elbe, Weser und Ems. Indikator fur die ökologische Verformung der Gewässer. Naturschutz und Landschaftsplanung 27: 211-217. GER.

Schuchardt B & Schirmer M (1991) Phytoplankton maxima in the tidal freshwater reaches of two coastal plain estuaries. Estuarine, Coastal and Shelf Science 32: 187-206.

Schuchardt B, Haesloop U & Schirmer M (1993) The tidal freshwater reach of the Weser estuary: riverine or estuarine? Netherlands Journal of Aquatic Ecology 27: 215-226.

Schuebel JR, Shen H & Park M (1986) Comparative analysis of estuaries bordering the Yellow Sea. In: Wolfe DA (ed) Estuarine variability, pp 43-62. Academic Press, San Diego, CA, USA.

Schumacher A (1957) Untersuchungen über die makroskopische Bodentierwelt der Pagensander Nebenelbe. Hamburg. [cited after Petermeier et al. 1996], GER.

Schumann EH & Pearce MW (1997) Freshwater inflow and estuarine variability in the Gamtoos estuary, South Africa. Estuaries 20: 124-133.

Schuyler AE (1986) Rare plants of the Delaware Estuary in Pennsylvania. In: Majumdar SK, Brenner FJ & Rhoads AF (eds) Endangered and threatened species programs in Pennsylvania and other states: causes, issues and management, pp. 156-162. The Pennsylvania Academy of Science, Harrisburg, PA, USA.

Schuyler AE, Anderson AB & Kolaga VJ (1993) Plant zonation changes in the tidal portion of the Delaware River. Proceedings of the Academy of Natural Sciences of Philadelphia 144: 263-266. USA.

Schwartz FJ (1967) Maryland turtles. University of Maryland, College Park, MD, USA.

Sculthorpe, CD (1967) The biology of aquatic vascular plants. Edward Arnold Ltd London, Reprint 1985 Koeltz Scientific Books, Königstein, GER.

Sebilo M, Billen G, Mayer B, Billiou D, Grably M, Garnier J & Mariotti A (2006) Assessing nitrification and denitrification in the Seine river and estuary using chemical and isotopic techniques. Ecosystems 9: 564-577.

Sebold KR (1992) From marsh to farm: the landscape transformation of coastal New Jersey. National Park Service, U.S. Department of Interior, Cultural Resources, Washington, DC.

Seelig A (1992) Profil-Typen und Standorte der Elbufer-Vegetation zwischen Staustufe Geesthacht und Bunthäuser Spitze im Bereich der Mitteltidehochwasserlinie. Institut für Angewandte Botanik der Universität Hamburg, Beiheft 3: 5-36. GER.

Segers R (1998) Methane production and methane consumption: a review of processes underlying wetland methane fluxes. Biogeochemistry 41: 23-51.

Sehlinger B & Otey D (1980) Southern Georgia canoeing: a canoeing and kayaking guide to the streams of the western Piedmont, Coastal Plain, Georgia coast and Okefenokee Swamp. Menasha Ridge Press, Birmingham, AL, USA.

Seine-Aval (2006) North-Atlantic Estuaries: Problems and perspectives. GIP Seine-Aval, Rouen, FR.

Seitzinger SP (1988) Denitrification in freshwater and coastal marine ecosystems: ecological and geochemical significance. Limnology and Oceanography 33: 702-724.

Seitzinger SP, Gardner WS & Spratt AK (1991) The effect of salinity on ammonium sorption in aquatic sediments - implications for benthic nutrient recycling. Estuaries 14: 167-174.

Seitzinger SP, Kroeze C, Bouwman AF, Caraco NF, Dentener F & Styles RV (2002) Global patterns of dissolved inorganic and particulate nitrogen inputs to coastal systems: recent conditions and future projections. Estuaries 25: 640-655.

Senerchia-Nardone P & Holland MM (1985) Floristic comparison of two tidal wetlands in the Connecticut River estuary. Newsletter Connecticut Botanical Society 13: 1-5. USA.

SERC (Smithsonian Environmental Research Center) (2006) NEMESIS program (National Exotic Marine and Estuarine Species Information System). http://www.invasive speciesinfo.gov.

SERC Marine Invasions Research Lab (2006) http://invasions.si.edu/nemesis/index.html (Viewed January 2008).

Serodes J-B & Troude J-P (1984) Sedimentation cycle of a freshwater tidal flat in the St. Lawrence estuary. Estuaries 7: 119-127.

Servais P & Garnier J (2006) Organic carbon and bacterial heterotrophic activity in the maximum turbidity zone of the Seine estuary (France). Aquatic Sciences 68: 78-85.

Setzler-Hamilton EM (1991) White Perch. In: Funderbunk SL, Jordan SJ, Mihursky JA & Riley D (eds) Habitat requirements for Chesapeake Bay living resources, pp 12-1 to 12-20. National Oceanic and Atmospheric Administration. Annapolis, MD, USA.

Setzler-Hamilton EM & Hall L Jr (1991) Striped Bass. In: Funderbunk SL, Jordan SJ, Mihursky JA & Riley D (eds) Habitat requirements for Chesapeake Bay living resources, pp 13-1 to 13-31. National Oceanic and Atmospheric Administration. Annapolis, MD, USA.

Setzler-Hamilton EM, Boynton WR, Mihursky JA, Polgar TT & Wood KV (1981) Spatial and temporal distribution of striped bass eggs, larvae and juveniles in the Potomac Estuary. Transactions of the American Fisheries Society 110: 121-136.

Seys J, Vincx M & Meire P (1999) Spatial distribution of oligochaetes (Clitellata) in the tidal freshwater and brackish parts of the Schelde estuary (Belgium). Hydrobiologia 406: 119-132.

Shaffer GW, Sasser CE, Gosselink JG & Rejmanek M (1992) Vegetation dynamics in the emerging Atchafalaya Delta, Louisiana, USA. Journal of Ecology 80: 677-687.

Shamsi SRA & Whitehead FH (1977) Comparative eco-physiology of *Epilobium hirsutum* L. and *Lythrum salicaria* L. iv.: effects of temperature and inter-specific competition and concluding discussion. Journal of Ecology 65: 71-84.

Sheail J (1998) The Tweed fisheries: an historical perspective. The Science of the Total Environment 210/211: 469-482.

Shumway SW & Bertness MD (1992) Salt stress limitation of seedling recruitment in a salt marsh plant community. Oecologia 92: 490-497.

Sibylle O, Groffman PM, Findlay SEG & Arreola AE (1999) Invasive plant species and microbial processes in a tidal freshwater marsh. Journal of Environmental Quality 28: 1252-1257.

Sickels FA & Simpson RL (1985) Growth and survival of Giant Ragweed (*Ambrosia trifida*) in a Delaware River USA freshwater tidal wetland. Bulletin of the Torrey Botanical Club 112: 368-375. USA.

Sikora JP, Sikora WB, Erkenbrecher CW & Coull BC (1977) Significance of ATP, carbon and caloric content of meiobenthic nematodes in partitioning benthic biomass. Marine Biology 44: 7-14.

Silliman BR & Bertness MD (2004) Shoreline development drives invasion of *Phragmites australis* and loss of plant diversity on New England salt marshes. Conservation Biology 18: 1424-1434.

Silliman BR & Newell SY (2003) Fungal farming in a snail. Proceedings of the National Academy of Sciences of the United States of America 100: 15643-15648.

Silliman BR & Zieman JC (2001) Top-down control of *Spartina alterniflora* production by periwinkle grazing in a Virginia salt marsh. Ecology 82: 2830-2845.

Simenstad CA & Thom RM (1996) Functional equivalency trajectories of the restored Gog-Le-Hi-Te estuarine wetland. Ecological Applications 6: 38-56.

Simenstad C, Toft J, Higgins H, Cordell J, Orr M, Williams P, Grimaldo L, Hymanson Z & Reed D (2000a) Sacramento/San Joaquin Delta breached levee wetland study (BREACH). School of Fisheries, University of Washington, Seattle, WA, USA.

Simenstad CA, Hood WG, Thom RM, Levy DA & Bottom DL (2000b) Landscape structure and scale constraints on restoring estuarine wetlands for Pacific Coast juvenile fishes. In: Weinstein MP & Kreeger DA (eds) Concepts and controversies in tidal marsh ecology, pp. 597-630. Kluwer Academic Publ., Dordrecht, NL.

Simpson RL, Whigham DF & Walker R (1978) Seasonal patterns of nutrient movement in a freshwater tidal marsh. In: Good RE, Whigham DF & Simpson RL (eds) Freshwater wetlands. Ecological processes and management potential, pp. 259-263. Academic Press, New York.

Simpson RL, Whigham DF & Brannigan K (1979) The midsummer insect communities of freshwater tidal wetland macrophytes. Delaware River estuary, New Jersey. Bulletin of the New Jersey Academy of Sciences 24: 22-28. USA.

Simpson RL, Good RE, Leck MA & Whigham DF (1983a) The ecology of freshwater tidal wetlands. BioScience 34: 255-259.

Simpson RL, Good RE, Walker R & Frasco BR (1983b) The role of Delaware river freshwater tidal wetlands in the retention of nutrients and heavy metals. Journal of Environmental Quality 12: 41-48.

Simpson RL, Leck MA & Parker VT (1985) The comparative ecology of *Impatiens capensis* Meerb. (Balsaminaceae) in Central New Jersey. Bulletin of the Torrey Botanical Club 112: 295-311. USA.

Sin Y, Wetzel RL & Anderson IC (1999) Spatial and temporal characteristics of nutrient and phytoplankton dynamics in the York River estuary, Virginia: analysis of long term data. Estuaries 22: 260-275.

Sinsabaugh RL & Findlay S (1995) Microbial production, enzyme activity, and carbon turnover in surface sediments of the Hudson River estuary. Microbial Ecology 30: 127-141.

Sipple WS (1991) Through the eyes of a young naturalist. Gateway Press, Baltimore, MD, USA.

Smit H & Coops H (1991) Ecological, economic and social aspects of natural and man-made bulrush (*Scirpus lacustris* L.) wetlands in The Netherlands. Landscape and Urban Planning 20: 33-40.

Smit H, Smits R, Van der Velde G & Coops H (1997) Ecosystem responses in the Rhine-Meuse delta during two decades after

enclosure and steps toward estuary restoration. Estuaries 20: 504-520.

Smith C, Alber M & Chalmers A (2001) Linking shifts in historic estuarine vegetation to salinity changes using a GIS. In: Hatcher KJ (ed) Proceedings 2001 Georgia Water Resources Conference, University of Georgia. Athens, GA, USA.

Smith HR & Jordan PA (1976) The effect of increased trapping pressure on the age structure and stability of an estuarine muskrat population. Transactions of the Northeast Section the Wildlife Society 33: 119-124. USA.

Smith SG (2000) Typhaceae. In: Flora of North America Editorial Committee (eds) 22. (Viewed 30 June 2007 at http://www.efloras.org/).

Smith SV, Swaney DP, Talaue-McManus L, Bartley JD, Sandhei PT, McLaughlin CJ, Dupra VC, Crossland CJ, Buddemeier RW, Maxwell BA & Wulff F (2003) Humans, hydrology, and the distribution of inorganic nutrient loading to the ocean. Bioscience 53: 235–245.

Smith TR & Bretherton FP (1972) Stability and the conservation of mass in drainage basin evolution. Water Resources Research 8: 1506-1529.

Smith VH (1998) Cultural eutrophication of inland, estuarine, and coastal waters. In: Pace ML & Groffman PM (eds) Successes, limitations, and frontiers in ecosystem science, pp. 7-49. Springer, New York.

Smithberger S & Swarth CW (1993) Reptiles and amphibians of the Jug Bay Wetlands Sanctuary. Maryland Naturalist 37: 28-46. USA.

Sobczak WV, Cloern JE, Jassby AD & Muller-Solger AB (2002) Bioavailability of organic matter in a highly disturbed estuary: the role of detrital and algal resources. Proceedings of the National Academy of Sciences of the United States of America 99: 8101-8105.

Sobczak WV, Cloern JE, Jassby AD, Cole BE, Schraga TS & Arnsberg A (2005) Detritus fuels ecosystem metabolism but not metazoan food webs in San Francisco estuary's freshwater Delta. Estuaries 28: 124-137.

Soetaert K & Herman P (1995a) Carbon flows in the Westerschelde estuary (The Netherlands) evaluated by means of an ecosystem model (MOSES). Hydrobiologia 311: 247-266.

Soetaert K & Herman P (1995b) Nitrogen dynamics in the Westerschelde estuary (SW-Netherlands) estimated by means of an ecosystem model (MOSES). Hydrobiologia 311: 225-246.

Soetaert K, Hoffman M, Meire P, Starink M, Van Oevelen D, Van Regenmortel S & Cox T (2004) Modeling growth and carbon allocation in two reed beds (*Phragmites australis*) in the Scheldt estuary. Aquatic Botany 79: 211-234.

Soetaert K, Middelburg JJ, Heip C, Meire P, Van Damme S & Maris T (2006) Long-term change in dissolved inorganic nutrients in the heterotrophic Scheldt estuary (Belgium, the Netherlands). Limnology and Oceanography 51: 409-423.

Sonneveld F (1958) Bodemkartering en daarop afgestemde landbouwkundige onderzoekingen (soil survey and attuned agricultural investigations of) van het Land van Heusden en Altena. PhD Dissertation Wageningen. Verslagen Landbouwkundig onderzoek 64.4. Staatsdrukkerij, The Hague, NL.

Sousa R, Guilhermino L & Antunes C (2005) Molluscan fauna in the freshwater tidal area of the River Minho estuary, NW of Iberian Peninsula. Annales de Limnologie – International Journal of Limnology 41: 141-147.

Sousa R, Antunes C & Guilhermino L (2007) Species composition and monthly variation of the Molluscan fauna in the freshwater subtidal area of the River Minho estuary. Estuarine, Coastal and Shelf Science 75: 90-100

Southern, WE (1987) Gull research in the 1980s: symposium overview. In: Hand JL, Southern WE & Vermeer K (eds) Ecology and behavior of gulls, pp. 1-7. Studies in Avian Biology No. 10. Cooper Ornithological Society. Allen Press, Lawrence, KS, USA.

Spalding EA & Hester MW (2007) Interactive effects of hydrology and salinity on oligohaline plant species productivity: implications of relative sea-level rise. Estuaries and Coasts 30: 214-225.

Spray SL & McGlothlin KL (2004) The challenge of preserving wetlands: concluding thoughts. In: Spray SL & McGlothlin KL (eds) Wetlands - Exploring environmental challenges, a multidisciplinary approach, pp. 157-166. Rowman & Littlefield Publishers, Inc, Lanham, MD, USA.

Stalter R & Baden J (1994) A twenty year comparison of vegetation of three abandoned rice fields, Georgetown County, South Carolina. Castanea 59: 66-77. USA

Stansfield CA Jr (1998) A geography of New Jersey: the city in the garden. Rutgers University Press, New Brunswick, NJ, USA.

Stapleton J & Kiviat E (1979) Rights of birds and rights of way: Vegetation management on a railroad causeway and its effect on breeding birds. American Birds 33: 7-10.

Steege V (2007) Die Entwicklung der Tide-Röhrichte an der Weser und ihr Leitbild. BFG Veranstaltungen 2: 31-45. GER.

Steen RICA, Evers EHG, Van Hattum B, Cofino WP & Brinkman UATh (2002) Net fluxes of pesticides from the Scheldt Estuary into the North Sea: a model approach. Environmental Pollution 116: 75-84.

Stehr G, Böttcher B, Dittberner P, Rath G & Koops H-P (1995) The ammonia-oxidizing, nitrifying population of the River Elbe estuary. FEMS Microbiology Ecology 17: 177-186.

Stein BA & Flack SR (eds) (1996) America's least wanted: alien species invasions of U.S. ecosystems. The Nature Conservancy, Arlington, VA, USA.

Stevens G (ed) (2001) Natural resource / human use inventory of various Hudson River estuary lands. Report to New York State Department of Environmental Conservation, New Paltz, NY, USA.

Stevenson JS, Heinle DR, Flemer DA, Small RJ, Rowland RA & Ustach JF (1985) Nutrient exchanges between brackish water marshes and the estuary. In: Wiley M (ed) Estuarine Processes Vol II, pp. 219-240. Academic Press, New York.

Stewart MA (1991) Rice, water, and power: landscapes of domination and resistance in the Lowcountry, 1790-1880. Environmental History Review 15: 47-64. USA.

Stewart MA (2002) "What nature suffers to groe": life, labor, and landscape on the Georgia coast, 1680-1920. University of Georgia Press, Athens, GA, USA.

Stiller G (2007) Vorgezogene überblicksweise Überwachung der Qualitätskomponenten Makrophyten und Angiospermen in der Tideelbe gemäß EG-Wasserrahmenrichtlinie. Gutachten im Auftrag von Sonderaufgabenbereich Tideelbe der ARGE ELBE, Wassergütestelle Elbe, Hamburg, GER.

Stillwater Environmental Services (2003) Decker Island Phase ii habitat development and levee rehabilitation project, initial study/mitigated negative declaration public review draft. Stillwater Environmental Services, Davis, CA, USA. Accessed from http://www.dfm.water.ca.gov/dsmo/levees/decker_ceqa.html.

Stone GW, Grymes III JM, Dingler JR & Pepper DA (1997) Overview and significance of hurricanes on the Louisiana coast, U.S.A. Journal of Coastal Research 13: 656-669.

Stone W (1965) Bird studies at Old Cape May: an ornithology of coastal New Jersey. Dover Publications, New York. (Originally published 1937 by the Delaware Valley Ornithological Club.)

Stone WB, Kiviat E & Butkas SA (1980) Toxicants in snapping turtles. New York Fish and Game Journal 27: 39-50. USA

Storm C, Van der Velden JA & Kuijpers JWM (2005) From nature conservation towards restoration of estuarine dynamics in the heavily modified Rhine-Meuse estuary, The Netherlands. Archiv für Hydrobiologie Suppl. 155 (Large Rivers 15): 305-318.

Storm C, Kuijpers J & Harmsen C (2006) Eb… en weer vloed in het Haringvliet. Landschap 23: 199-207. NL.

Stortelder AHF, Schaminee JHJ & Hommel PWFM (1999) De Vegetatie van Nederland – deel 5 – Plantengemeenschappen van ruigten, struwelen en bossen. Opulus Press, Uppsala, Sweden.

Strayer DL (2006) The benthic animal communities of the tidal-freshwater Hudson River estuary. In: Levinton JS & Waldman JR (eds) The Hudson River estuary, pp. 266-278. Cambridge University Press, Boston, MA, USA.

Strayer DL & Jirka KJ (1997) The pearly mussels of New York state. Memoirs of the New York State Museum 26: 1-113. University of the State of New York, Albany, NY, USA.

Strayer DL & Smith LC (1996) Relationships between zebra mussels (*Dreissena polymorpha*) and unionid clams during early stages of the zebra mussel invasion of the Hudson river. Freshwater Biology 36: 771-779.

Strayer DL, Hunter DC, Smith LC & Borg CK (1994) Distribution, abundance and roles of freshwater clams (Bivalvia, Unionidae) in the freshwater tidal Hudson River. Freshwater Biology 31: 239-248.

Strayer DL, Lutz C, Malcom HM, Munger K & Shaw WH (2003) Invertebrate communities associated with a native (*Vallisneria americana*) and an alien (*Trapa natans*) macrophyte in a large river. Freshwater Biology 48: 1938-1949.

Stroud PT (2000) The emperor of nature, Charles-Lucien Bonaparte and his world. University of Pennsylvania Press, Philadelphia, PA, USA.

Stroud PT (2005) Joseph Bonaparte, the man who once was king. University of Pennsylvania Press, Philadelphia, PA, USA.

Strucker RCW (1992) De Oude Maas, laatste zoetwatergetijderivier in Nederland. Het Vogeljaar 40: 105-109. NL.

Strucker RCW (1996) Vogels van de zoetwatergetijderivier de Oude Maas. Maasdam. Haveka, Alblasserdam, NL.

Strucker RCW, Preesman LC & Verkerk J (1994) Watervogels van het zoetwater-getijdegebied de Oude Maas. Limosa 67: 45-52. NL.

Struyf E (2005) The role of freshwater marshes in estuarine silica cycling (Scheldt estuary). PhD Dissertation, University of Antwerp, BEL.

Struyf E, Van Damme S & Meire P (2004) Possible effects of climate change on estuarine nutrient fluxes: a case study in the highly nutrified Schelde estuary (Belgium, The Netherlands). Estuarine, Coastal and Shelf Science 60: 649-661.

Struyf E, Van Damme S, Gribsholt B & Meire P (2005a) Freshwater marshes as dissolved silica recyclers in an estuarine environment (Schelde estuary, Belgium). Hydrobiologia 540: 69-77.

Struyf E, Van Damme S, Gribsholt B, Middelburg JJ & Meire P (2005b) Biogenic silica in freshwater marsh sediments and vegetation. Marine Ecology Progress Series 303: 51-60.

Struyf E, Dausse A, Van Damme S, Bal K, Gribsholt B, Boschker HTS, Middelburg JJ & Meire P (2006) Tidal marshes and biogenic silica recycling at the land-sea interface. Limnology and Oceanography 51: 838-846.

Struyf E, Van Damme S, Gribsholt B, Middelburg JJ & Meire P (2007) *Phragmites australis* and Si recycling in freshwater tidal marshes (Schelde estuary, Belgium). Aquatic Botany 87: 134-140.

Stutz B (1992) Natural lives modern times: people and places of the Delaware River. Crown Publishers, New York.

Sundareshwar PV & Morris JT (1999) Phosphorus sorption characteristics of intertidal marsh sediments along an estuarine salinity gradient. Limnology and Oceanography 44: 1693-1701.

Sundareshwar PV, Morris JT, Koepfler EK & Fornwalt B (2003) Phosphorus limitation of coastal ecosystem processes. Science 299: 563-565.

Swarth CW (1998) The ecology and population status of turtles at Jug Bay, Patuxent River, Maryland. Technical report of the Jug Bay Wetlands Sanctuary, Lothian, MD, USA.

Swarth CW (2004) Natural history and reproductive biology of the red-bellied turtle (*Pseudemys rubriventris*). In: Swarth CW, Roosenburg WM & Kiviat E (eds) Conservation and ecology of turtles of the Mid-Atlantic Region, pp. 73-84. Bibliomania, Salt Lake City, UT, USA.

Swarth CW & Burke J (2000) Waterbirds in freshwater tidal wetlands: population trends and habitat use in the non-breeding season. Technical Report of the Jug Bay Wetlands Sanctuary, Lothian, MD, USA.

Swarth CW & Burke J (2002) Seasonal dynamics of waterbirds using freshwater tidal wetlands. In: Perry MC (ed) Black ducks and their Chesapeake Bay habitats: proceedings of a symposium, pp. 39. USGS, Biological Resources Discipline Information and Technology Report USGS/BRD/ITR-2002-2005. Annapolis, MD, USA.

Swarzenski CM, Swenson EM, Sasser CE & Gosselink JG (1991) Marsh mat flotation in the Louisiana Delta Plain. Journal of Ecology 79: 999-1011.

Swift B (1989) Avian breeding habitats in Hudson River tidal marshes. Final Report to the Hudson River Foundation. New York State Department of Environmental Conservation, Albany, NY, USA.

Syphard AD & Garcia MW (2001) Human- and beaver-induced wetland changes in the Chickahominy River watershed from 1953 to 1994. Wetlands 21: 342-353.

Syphax SW & Hammerschlag RS (1995) The reconstruction of Kenilworth Marsh, the last tidal marsh in Washington, DC. Park Science 15: 15-19. USA.

Tande GF & Jennings TW (1986) Classification and mapping of tundra near Hazen Bay, Yukon Delta National Wildlife Refuge. U.S. Fish and Wildlife Service, Anchorage, AK, USA.

Tangley L (1988) Preparing for climate change. BioScience 38: 14-18.

Tanner CD, Cordell JR, Rubey J & Tear LM (2002) Restoration of freshwater intertidal habitat functions at Spencer Island, Everett, Washington. Restoration Ecology 10: 564-576.

Taylor RT (1981) Shoreline vegetation of the arctic Alaska coast. Arctic 34: 37-42.

Taylor RW & Counts III CL (1977) The Asiatic clam, *Corbicula manilensis*, as a food of the northern raccoon, *Procyon lotor*. Nautilus 91: 34. USA.

Temmerman S (2003) Sedimentation on tidal marshes in the Scheldt estuary. A field and numerical modelling study. PhD Dissertation, KU Leuven, BEL.

Temmerman S, Govers G, Meire P & Wartel S (2003a) Modelling long-term tidal marsh growth under changing tidal conditions and suspended sediment concentrations, Scheldt estuary, Belgium. Marine Geology 193: 151-169.

Temmerman S, Govers G, Wartel S & Meire P (2003b) Spatial and temporal factors controlling short-term sedimentation in a salt and freshwater tidal marsh, Scheldt estuary, Belgium, SW Netherlands. Earth Surface Processes and Landforms 28: 739-755.

Temmerman S, Govers G, Wartel S & Meire P (2004) Modelling estuarine variations in tidal marsh sedimentation: response to changing sea level and suspended sediment concentrations. Marine Geology 212: 1-19.

Templer P, Findlay S & Wigand C (1998) Sediment chemistry associated with native and non-native emergent macrophytes of a Hudson River marsh ecosystem. Wetlands 18: 70-78.

Tenore K, Cammen L, Findlay S & Phillips N (1982) Perspectives of research on detritus: do factors controlling the availability of detritus to macroconsumers depend on its source. Journal of Marine Research 40: 473-490.

Thiel R & Potter IC (2001) The ichthyofaunal composition of the Elbe Estuary: an analysis in space and time. Marine Biology 138: 603-616.

Thiele H-U (1977) Carabid beetles in their environments – a study on habitat selection by adaptations in physiology and behaviour. Springer-Verlag, Berlin, GER.

Thilenius TF (1995) Phytosociology and succession on earthquake-uplifted coastal wetlands, Copper River Delta, Alaska. General Technical Report PNW-GTR-346. U.S. Forest Service, Portland, OR, USA.

Thom RM, Blanton SL, Borde AB, Williams GD, Woodruff DL & Huesemann MH (2002) Investigations into wetland carbon sequestration as remediation for global warming. In: Nehring KW & Brauning SE (eds) International conference on wetlands and remediation; wetlands and remediation II, pp. 311-320. Battelle Press, Columbus, OH, USA.

Thomas LK Jr (1980) The impact of three exotic plant species on a Potomac island. National Park Service Scientific Monograph Series 13, U.S. Department of the Interior, Washington, DC.

Thompson K & Grime JP (1979) Seasonal variation in the seed banks of herbaceous species in ten contrasting habitats. Journal of Ecology 67: 893-921.

Thompson, K (1976) Swamp development in the headwaters of the White Nile. In: Rzoska J (ed) The Nile, Biology of an Ancient River, pp. 177-196. Junk Publishers, The Hague, NL.

Thompson K, Bakker J & Bekker R (1997) The soil seed banks of North West Europe: methodology, density and longevity. Cambridge University Press, Cambridge, UK.

Thompson SA (2000) Acoraceae. In: Flora of North America Editorial Committee (eds) Flora of North America 22. (Viewed 30 June 2007 at http://www.efloras.org/).

Thonon I (2006) Deposition of sediment and associated heavy metals on floodplains. Netherlands Geographical Studies 337. Utrecht, NL.

Thorbahn PT & Cox DC (1988) The effect of estuary formation on prehistoric settlement in southern Rhode Island. In: Nicholas GP (ed) Holocene human ecology in Northeastern North America, pp. 167-182. Plenum Press, New York.

Tiner RW Jr (1977) An inventory of South Carolina's coastal marshes. South Carolina Marine Resources Center Technical Report Number 23, South Carolina Wildlife and Marine Resources Department, Charleston, SC, USA.

Tiner RW Jr (1985) Wetlands of New Jersey. U.S. Fish and Wildlife Service, National Wetlands Inventory, Newton Corner, MA, USA.

Tiner RW (2005) Assessing cumulative loss of wetland functions in the Nanticoke river watershed using enhanced National Wetlands Inventory data. Wetlands 25**:** 405-419.

Tiner RW Jr & Burke DG (1995) Wetlands of Maryland. U.S. Fish and Wildlife Service, Ecological Services, Region 5, Hadley, MA and Maryland Department of Natural Resources, Annapolis, MD, USA.

Titus JG & Narayanan VK (1995) The probability of sea level rise. EPA 230-R-95-008. U.S. Environmental Protection Agency, Washington, DC.

Tobias CR, Macko SA, Anderson IC, Canuel EA & Harvey JW (2001) Tracking the fate of a high concentration groundwater nitrate plume through a fringing marsh: a combined groundwater tracer and in situ isotope enrichment study. Limnology and Oceanography 46: 1977-1989.

Tomlinson PB (1986) The botany of mangroves. Cambridge University Press, Cambridge, UK.

Townsend JF (2007) Natural heritage resources of Virginia: rare plants. Natural Heritage Technical Report 07-13. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, VA, USA.

Tuckerman S (ed) (1990) Appalachian Mountain Club river guide: Massachusetts, Connecticut, Rhode Island. Appalachian Mountain Club, Boston, MA, USA.

Tufford DL (2005) State of knowledge: South Carolina coastal wetland impoundments. South Carolina Sea Grant Consortium, Charleston, SC, USA.

Turin H (2000) De Nederlandse loopkevers: verspreiding en ecologie (Coleoptera: Carabidae). Nationaal Natuurhistorisch Museum Naturalis, Leiden, NL.

Tyler AC, Mastronicola TA & McGlathery KJ (2003a) Nitrogen fixation and nitrogen limitation of primary production along a natural marsh chronosequence. Oecologia 136: 431-438.

Tyler AC, McGlathery KJ & Anderson IC (2003b) Benthic algae control sediment-water column fluxes of organic and inorganic nitrogen compounds in a temperate lagoon. Limnology and Oceanography 48: 2125-2137.

Uncles RJ & Smith RE (2005) A note on the comparative turbidity of some estuaries of the Americas. Journal of Coastal Research 21: 845-852.

Uncles RJ & Stephens JA (1993) The freshwater-saltwater interface and its relationship to the turbidity maximum in the Tamar estuary, United Kingdom. Estuaries 16: 126-141.

Uncles RJ & Stephens JA (1997) Dynamics of turbidity in the Tweed estuary. Estuarine, Coastal and Shelf Science 45: 745-758.

Uncles RJ, Howland RJM, Aeston AE, Griffiths ML, Harris C, King RS, Morris AW, Plummer DH & Woodward EMS (1998) Concentrations of dissolved nutrients in the tidal Yorkshire Ouse River and Humber Estuary. Science of the Total Environment 210-211: 377-388.

Uncles RJ, Stephens JA & Smith RE (2002) The dependence of estuarine turbidity on tidal intrusion length, tidal range and residence time. Continental Shelf Research 22: 1835-1856.

US Fish and Wildlife Service (2006) http://www.fws.gov/chesapeakebay/baldeagl.htm (Viewed January 2008).

USACE (1971) National shoreline study, inventory report – Alaska region. U.S. Army Corps of Engineers, North Pacific Division, Portland, OR, USA.

USDA (2007) The plants database (http://plants.usda.gov). National Plant Data Center, Baton Rouge, LA, USA.

USDI (2007) Bald eagle soars off Endangered Species List. U.S. Department of the Interior. (http://www.doi.gov/news/07_News_Releases/070628.html).

USFS (2006) Species at Stikine flats wildlife viewing area. U.S. Forest Service. http://www.fs.fed.us/r10/ro/naturewatch/southeast/stikine_flats/stikine_species.htm

USFWS (1982) National Wetland Inventory maps, Petersburg C-1 and C-2 quadrangles. U.S. Fish and Wildlife Service, Washington, DC.

USFWS (1985) National Wetland Inventory maps, Cordova A-2, B-2, B-3, B-4, B-5, and C-5 quadrangles. U.S. Fish and Wildlife Service, Washington, DC.

USFWS (1995) Sensitive joint-vetch (*Aeschynomene virginica*) recovery plan. U.S. Fish and Wildlife Service, Hadley, MA, USA.

USFWS (2006a) National Wetlands Inventory wetlands online mapper (http://www.fws.gov/nwi). U.S. Fish and Wildlife Service, Washington, DC.

USFWS (2006b) U.S. Fish and Wildlife Service: Chesapeake Bay nutria control. (http://www.fws.gov/invasives/Indexhottop.NU.html)

Vader W (1977) Habitat and distribution of *Perforatella rubiginosa* (Gastropoda, Pulmonata) in the freshwater tidal region of the Scheldt estuary, Belgium. Hydrobiologia 52: 23-28.

Van Allemeersch R, Hoffmann M & Meire P (1999) Ontwerpbeheersplan voor het Vlaams natuurreservaat slikken en schorren van Schelde en Durme. University of Gent / Institute for Nature Conservation, Brussel, BEL.

Van Benthem Jutting T (1933) Mollusca (1), A. Gastropoda Prosobranchia et Pulmonata. Fauna van Nederland, 7. Leiden, NL.

Van Beusekom JEE & Brockmann UH (1998) Transformation of phosphorus in the Elbe estuary. Estuaries 21: 518-526.

Van Beusekom JEE & De Jonge VNN (2002) Long-term changes in Wadden-Sea nutrient cycles: importance of organic matter import from the North Sea. Hydrobiologia 475/476: 185–194.

Van Braeckel A, Piesschaert F & Van den Bergh E (2006) Historical analysis of the Zeeschelde and tidal tributaries, 19th century till present. (In Dutch with English summary) INBO.2006.29. Research Institute for Nature and Forest, Brussels, BEL.

Van Cappellen P (2003) Biomineralisation and global biogeochemical cycles. Reviews in Mineralogy and Geochemistry 54: 357-381.

Van Damme S, Ysebaert T, Meire P & Van den Bergh E (1999) Habitatstructuren, waterkwaliteit en leefgemeenschappen in het Schelde-estuarium. Rapport Instituut voor Natuurbehoud 99/24, Brussel, BEL.

Van Damme S, Struyf E, Maris T, Ysebaert T, Dehairs F, Tackx M, Heip C & Meire P (2005) Spatial and temporal patterns of water quality along the estuarine salinity gradient of the Scheldt estuary (Belgium and The Netherlands): results of an integrated monitoring approach. Hydrobiologia 540: 29-45.

Van de Noort R (2004) The Humber wetlands, the archaeology of a dynamic landscape. Windgather Press, Macclesfield, UK.

Van de Noort R & Ellis S (2000) The Humber estuary: managing the archaeological resource in a dynamic environment. In: Pye K & Allen JRL (eds) Coastal and estuarine environments: sedimentology, geomorphology and geoarchaeology. Special Publications 175: 419-427. Geological Society, London, UK.

Van de Rijt CWCJ, Hazelhoff L & Blom CWPM (1996) Vegetation zonation in a former tidal area: a vegetation-type response model based on CDA logistic regression using GIS. Journal of Vegetation Science 7: 505-518.

Van den Berg GA, Loch JPG, Van der Heijdt LM & Zwolsman JJG (1998) Mobilisation of heavy metals in contaminated sediments in the river Meuse, The Netherlands. Water, Air and Soil Pollution 116: 567-586.

Van den Berg JH, Jeuken CJL & Van der Spek AJF (1996). Hydraulic processes affecting the morphology and evolution of the Westerschelde estuary. In: Nordstrom KF & Roman CT (eds) Estuarine shores – evolution, environments and human alterations, pp. 157-184. John Wiley & Sons, Chichester, UK.

Van den Bergh E, Van Damme S, Graveland J, De Jong D, Baten I & Meire P (2005a) Ecological rehabilitation of the Schelde estuary (The Netherlands-Belgium; Northwest Europe): linking ecology, safety against floods, and accessibility for port development. Restoration Ecology 13: 204-214

Van den Bergh E, Ysebaert T & Meire P (2005b) Water bird communities in the Lower Zeeschelde: long-term changes near an expanding harbour. Hydrobiologia 540: 237-258.

Van den Broeke PW (1996) A crowded peat area: observations in Vlaardingen-West and the Iron Age habitation of southern Midden-Delfland. Analecta Praehistorica Leidensia 26: 59-82. NL.

Van den Wyngaert I (2001) Grazing of extensive reed beds by moulting Greylag geese: effects on nutrient dynamics and growth of the *Phragmites australis* vegetation and consequences for the lake ecosystem. PhD Dissertation, Utrecht University, Utrecht, NL.

Van der Esch C (1985) Houweningen onder de loep. Vondsten van een voormalig dorp in de polder Ruygten bezuiden den Peereboom. Westerheem A.W.N. XXXIV pp. 245-258. NL.

Van der Heide GD & Lebret T (1944) Achter de schermen - een boek over eendenkooien. Kinheim-Uitgeverij, Heiloo, NL.

Van der Meijden R (1996) Heukels' Flora van Nederland. Wolters-Noordhoff, Groningen, NL.

Van der Molen DT (ed) (2004) Referenties en concept-maatlatten voor de rivieren voor de Kaderrichtlijn Water. STOWA Rapport 2004.43, Utrecht, NL.

Van der Pluijm A (1995) De mos- en korstmosflora van de Biesbosch. Report Staatsbosbeheer regio Brabant-West, Biesbosch, Werkendam, NL.

Van der Spek AJF (1997) Tidal asymmetry and long-term evolution of Holocene tidal basins in the Netherlands: simulations of paleo-tides in the Schelde estuary. Marine Geology 141: 71-90.

Van der Zee C, Roevros N & Chou L (2007) Phosphorus speciation, transformation and retention in the Scheldt estuary (Belgium/ The Netherlands) from the freshwater tidal limits to the North Sea. Marine Chemistry 106: 76-91.

Van Dijk GL, Van Liere L, Admiraal W, Bannink BA & Cappon JJ (1994) Present state of the water quality of European rivers and implications for management. The Science of the Total Environment 145: 187-195.

Van Engle WA & Joseph EB (1968) Characterization of coastal and estuarine fish nursery grounds as natural communities. Final Report to Bureau of Commercial Fisheries, Virginia Institute of Marine Science, Gloucester Point, VA, USA.

Van Gelder RG (1984) The mammals of the State of New Jersey: a preliminary annotated list. New Jersey Audubon Society, occasional paper no. 143, Department of Natural History, Bernardsville, NJ, USA.

Van Ginkel E (2002) Dam in de Rotte, het begin van Rotterdam. Flyer with text, maps, colored photographs, painting. Gemeentewerken Rotterdam, NL.

Van Heerden IL & HH Roberts (1980) The Atchafalaya delta: rapid progradation along a traditionally retreating coast (southcentral Louisiana). Zeitschrift fur Geomorphologie 34: 188-201. GER.

Van Oord familie (1999) Familie album, Fotoboek. Van Oord Vereniging, Werkendam, NL.

Van Oord JG (2001) Een gedurfde onderneming, de geschiedenis van de van Oord Groep 1948 – 1998. Walburg Pers, Zutphen, NL.

Van Oost K, Govers G & Desmet P (2000) Evaluating the effects of changes in landscape structure on soil erosion by water and tillage. Landscape Ecology 15: 577-589.

Van Regteren Altena CO (1958) Faunistische aantekeningen 5. *Pseudamnicola confusa* (Fraunenfeld, 1863) nieuw voor de Nederlandse fauna. Basteria 22: 66. NL.

Van Regteren Altena JF, Bakker JA, Clason AT, Glasbergen W, Groenman - van Wateringe W & Pons LJ (1962/1963) The Vlaardingen culture. Helinium II 3-35, 97-103, 215-243; III 39-54, 97-120. NL.

Van Rijckegem G, De Regge N & Van den Bergh E (2006) Voedselecologie en gedrag van overwinterende watervogels langs de Zeeschelde: een methodelogische studie. INBO.R. 2006.28. Instituut voor Natuur- en Bosonderzoek, Brussels, BEL.

Van Rompaey AJJ, Verstraeten G, Van Oost K, Govers G & Poesen J (2001) Modelling mean annual sediment yield using a distributed approach. Earth Surface Processes and Landforms 26: 1221-1236.

Van Someren RH (1841) St Elizabeths nacht. A° 1421**,** Dichtstuk in drie zangen, incl. historische aantekeningen en kaarten. Bosch en Zoon, Utrecht, NL.

Van Spaendonk JCM, Kromkamp JC & De Visscher PRM (1993) Primary production in a turbid coastal plain estuary, the Westerschelde (The Netherlands). Netherlands Journal of Sea Research 31: 267-279.

Van Steenis CGGJ (1971). De zoetwatergetijdedotter van de Biesbosch en de Oude Maas, *Caltha palustris* L. var. *araneosa*, var.nov. Gorteria 5: 213-219. NL.

Van Waeyenberge J, Anselin A & Meire P (1999) Aantallen, verspreiding en ecologie van de broedvogels in de buitendijkse gebieden langs de Zeeschelde. Rapport 99/16, Instituut voor Natuurbehoud, Brussels, BEL.

Van Wijk W & Van der Neut J (2003) De Biesbosch na de Don-Boscovloed. Aprilis, Zaltbommel, NL.

Van Wirdum G (1972) Rapport over vegetatie-onderzoek langs de Oude Maas, 1969-1971. Archives Rijnmond, Rotterdam, NL.

Vanderweijden CH & Middelburg JJ (1989) Hydrogeochemistry of the river Rhine - long-term and seasonal variability, elemental budgets, base levels and pollution. Water Research 23: 1247-1266.

VanGessel MJ (2001) Glyphosate-resistant horseweed from Delaware. Weed Science 49: 703-705. USA.

Vann CD & Megonigal JP (2002) Productivity responses of *Acer rubrum* and *Taxodium distichum* seedlings to elevated CO_2 and flooding. Environmental Pollution 116: S31-S36.

Vann CD & Megonigal JP (2003) Elevated CO_2 and water depth regulation of methane emissions: comparison of woody and non-woody wetland plant species. Biogeochemistry 63: 117-134.

Vasquez EA, Glenn EP, Brown JJ, Guntenspergen GR & Nelson SG (2005) Salt tolerance underlies the cryptic invasion of North American salt marshes by an introduced haplotype of the common reed *Phragmites australis* (Poaceae). Marine Ecology Progress Series 298: 1-8.

Vaughn CC & Hakenkamp CC (2001) The functional role of burrowing bivalves in freshwater ecosystems. Freshwater Biology 46: 1431-1446.

VDEQ (2007) Drought status report July 19, 2002. Drought Monitoring Task Force, Virginia Department of Environmental Quality (http://www.deq.virginia.gov/export/sites/default/waterresources/pdf/drought19july2002.pdf).

Velinsky DJ, Wade TI, Schlekat CE, McGee BL & Presley BJ (1994) Tidal river sediments in the Washington, D.C. area. II. Distribution and sources of trace metals. Estuaries 17: 305-320.

Vennum T Jr (1988) Wild rice and the Ojibway people. Minnesota Historical Society Press, St. Paul, MN, USA.

Verdonschot PFM (1980) Aquatische Oligochaeta III. Het Deltagebied. Delta Instituut voor Hydrobiologisch Onderzoek, Rapporten en verslagen 1980-9. Yerseke, NL.

Verger F (2005) Marais maritimes et estuaires du littoral français. Belin, Paris.

Verhey CJ, Heyligers PC, Lebret T & Zonneveld IS (1961) De Biesbosch, land van het levende water. Thieme, Zutphen, NL.

Verhoeven JTA, Whigham DF, Van Logtestijn R & O'Neill J (2001) A comparative study of nitrogen and phosphorus cycling in tidal and non-tidal riverine wetlands. Wetlands 21: 210-222.

Verhoeven JTA, Beltman B, Bobbink R & Whigham DF (eds) (2006) Wetlands and natural resource management. Springer, Berlin.

Verity PG (2002) A decade of change in the Skidaway River Estuary. I. Hydrography and nutrients. Estuaries 25: 944-960.

Verner J & Engelsen GH (1970) Territories, multiple nest building, and polygyny in the Long-billed Marsh Wren. Auk 87: 557-567. USA.

Viereck LA, Dryness CT, Batten AR & Wenzlick KJ (1992) The Alaska vegetation classification. General Technical Report PNW-GTR-286. U.S. Forest Service, Portland, OR, USA.

Vincent KA, Aucoin LT & Clark NS (2000) Freshwater bayou wetlands ME-04 (XME-21), Progress Report No. 5. Monitoring Series No. ME-04-MSPR-1099-5. Coastal Restoration Division, Louisiana Department of Natural Resources, Abbeville, LA, USA. Accessed from http://lacoast.gov.

Visser JM (1989) The impact of vertebrate herbivores on primary production of *Sagittaria* marshes in the Wax Lake Delta, Atchafalaya Bay, Louisiana. PhD Dissertation, Louisiana State University, Baton Rouge, LA, USA.

Visser JM, Sasser CE, Chabreck RH & Linscombe RG (1999) Long-term vegetation change in Louisiana tidal marshes. Wetlands 19: 168-175.

Vitousek PM, Mooney HM, Lubchenco J & Melillo JM (1997) Human domination of earth's ecosystems. Science 277: 494-499.

Von Weihe K & Reese G (1968) *Deschampsia wibeliana* Sonder (Parl.) – Beiträge zur Monographie einer Art des Tidegebietes. Botanische Jahrbücher 88: 1-48. GER.

Votteler TH & Muir TA (1996) Wetland management and research: wetland protection legislation. In: Fretwell JD, Williams JS & Redman PJ (compilers) National Water Summary on Wetland Resources, pp. 57-64. United States Geological Survey Water-Supply paper 2425, Washington, DC.

Wacker PO & Clemens PGE (1995) Land use in early New Jersey, a historical geography. New Jersey Historical Society, Newark, NJ, USA.

Wade TI, Velinsky DJ, Reinharz E & Schlekat CE (1994) Tidal river sediments in the Washington, D.C. area. II. Distribution and sources of organic contaminants. Estuaries 17: 321-333.

Wainwright SC, Weinstein MP, Able KW & Currin CA (2000) Relative importance of benthic microalgae, phytoplankton and detritus of smooth cordgrass *Spartina alterniflora* and the common reed *Phragmites australis* to brackish-marsh food webs. Marine Ecology Progress Series 200: 77-91.

Walker R (1981) Nitrogen, phosphorus and production dynamics for *Peltandra virginica* (L.) Kunth in a southern New Jersey freshwater tidal marsh. PhD Dissertation, Rutgers University. New Brunswick, NJ, USA.

Wall RD, Stewart RM, Cavallo J, McLearen D, Foss R, Perazio P & Dumont J (1996) Prehistoric archaeological synthesis. Trenton complex archaeology: report 15. The Cultural Resource Group, Louis Berger & Associates, Inc., Trenton, NJ, USA.

Walling DE, Owens PN, Carter J, Leeks GJL, Lewis S, Meharg AA & Wright J (2003) Storage of sediment-associated nutrients and contaminants in river channel and floodplain systems. Applied Geochemistry 18: 195-220.

Walsh LP, McCormick C, Martin C & Stocco DM (2000) Roundup inhibits steroidogenesis by disrupting steroidogenic acute regulatory (StAR) protein expression. Environmental Health Perspectives 108: 769-776. USA.

Walter R & Merritts D (2008) Natural streams and the legacy of water-powered milling. Science 319: 299-304.

Walton WC (1996) Occurrence of zebra mussel (*Dreissena polymorpha*) in the oligohaline Hudson River, New York. Estuaries 19: 612-618.

Wang B (2006) Cultural eutrophication in the Changjiang (Yangtze River) plume: history and perspective. Estuarine, Coastal and Shelf Science 69: 471-477.

Wang ZB, Jeuken MCJL, Gerritsen H, De Vriend HJ & Kornman BA (2002) Morphology and asymmetry of the vertical tide in the Westerschelde estuary. Continental Shelf Science 22: 2599-2609.

Ware DME (1991) Northern Joint-vetch, *Aeschynomene virginica* (L.) B.S.P. In: Terwilliger K (ed) Virginia's endangered species, pp. 119-121. McDonald & Woodward Publishing Company, Blacksburg, VA, USA.

Warren RS & Niering WA (1993) Vegetation changes on a northeast tidal marsh: interactions of sea level rise and marsh accretion. Ecology 74: 76-103.

Warren RS, Fell PE, Grimsby JL, Buck EL, Rilling GC & Fertik RA (2001) Rates, patterns, and impacts of *Phragmites australis* expansion and effects of experimental *Phragmites* control on vegetation, macroinvertebrates, and fish within tidelands of the lower Connecticut River. Estuaries 24: 90-107.

Warrick RA, Barrow EM & Wigley TML (1993) Climate and sea level change: observations, projections and implications. Cambridge University Press, New York.

Wassergütestelle Elbe (2008) Steckbrief Typ 20 - Subtyp Tideelbe, Steckbrief Typ 22.3 - Subtyp Tideelbe). Im Auftrag des Koordinierungsraums Tideelbe (Kor Tel). Entwurf. Hamburg, GER.

Watts BD, Markham AC & Byrd MA (2006) Salinity and population parameters of Bald Eagles (*Haliaeetus leucocephalus*) in the lower Chesapeake Bay. Auk 123: 393-404. USA.

Webster CG (1964) Fall foods of Soras from two habitats in Connecticut. Journal of Wildlife Management 28: 163-165.

Webster WD, Parnell JF & Biggs WC Jr (1985) Mammals of the Carolinas, Virginia, and Maryland. University of North Carolina Press, Chapel Hill, NC, USA.

Weeda EJ (2006) Crisis in de boomlaag, feest in de kruidlaag: *Carex strigosa* Huds. terug langs de benedenrivieren. Stratiotes 32: 31-50. NL.

Weeda EJ, Westra R, Westra C & Westra T (1987) Nederlandse ecologische flora. Wilde planten en hun relaties 2. IVN, Amsterdam, NL.

Weeda EJ, Van der Neut JJM, Boesveld AAM & Weel BAM (2003) Nationaal Park De Biesbosch: schatkamer van de wilde flora. Een overzicht van zeldzame en bedreigde vaatplanten. Alterra / Staatsbosbeheer. Wageningen, NL.

Weeda EJ, Schaminee JHJ & Van Duuren L (2005) Atlas van plantengemeenschappen in Nederland – deel 4 – Bossen, struwelen en ruigten. KNNV Uitgeverij, Utrecht, NL.

Weiner J & Whigham DF (1988) Size variability and self-thinning in wild rice (*Zizania aquatica*). American Journal of Botany 75: 445-448.

Weinstein MP, Litvin SY, Bosley KL, Fuller CM & Wainright SC (2000) The role of tidal salt marsh as an energy source for marine transient and resident fin-fishes: a stable isotope approach. Transactions of the American Fisheries Society 129: 797-810.

Weir DJ & McManus J (1987) The role of wind in generating turbidity maxima in the Tay estuary. Continental Shelf Research 7: 1315-1318.

Weis JS & Weis P (2003) Is the invasion of the common reed, *Phragmites australis*, into tidal marshes of the eastern US an ecological disaster? Marine Pollution Bulletin 46: 816-820.

Weisberg SB, Whalen R & Lotrich VA (1981) Tidal and diurnal influence on food consumption of a salt marsh killifish *Fundulus heteroclitus*. Marine Biology 61: 243-246.

Weller MW (1981) Freshwater marshes: ecology and wildlife management. University of Minnesota Press, Minneapolis, MN, USA.

Weller MW (1999) Wetland birds: habitat resources and conservation implications. Cambridge University Press, Cambridge, UK.

Wells JT, Chinburg SJ & Coleman JM (1982) Development of the Atchafalaya River deltas: generic analysis. Center of Wetland Resources, Louisiana State University, Baton Rouge, LA, USA.

West RJ & Walford TR (2000) Estuarine fishes in two large eastern Australian coastal rivers – does prawn trawling influence fish community structure? Fisheries Management and Ecology 7: 523-536.

Weston NB & Joye SB (2005) Temperature-driven decoupling of key phases of organic matter degradation in marine sediments. Proceedings of the National Academy of Sciences 102: 17036-17040.

Weston NB, Dixon RE & Joye SB (2006) Ramifications of increased salinity in tidal freshwater sediments: geochemistry and microbial pathways of organic matter mineralization. Journal of Geophysical Research-Biogeosciences 111: Art. No. G01009 FEB 7 2006.

Wetzel PR, Kitchens WM, Brush JM & Dusek ML (2004) Use of a reciprocal transplant study to measure the rate of plant community change in a tidal marsh along a salinity gradient. Wetlands 24: 879-890.

Whigham DF & Simpson RL (1975) Ecological studies of the Hamilton Marshes, progress report for the period June 1974 - January 1975. Biology Department, Rider University, Trenton, NJ, USA.

Whigham DF & Simpson RL (1976a) The potential use of freshwater tidal marshes in the management of water quality in the Delaware River. In: Tourbier J & Pierson RW Jr (eds) Biological control of water pollution, pp. 173-186. University of Pennsylvania Press, Philadelphia, PA, USA.

Whigham DF & Simpson RL (1976b) Sewage spray irrigation in a Delaware River freshwater tidal marsh. In: Tilton D, Kadlec J & Richardson CJ (eds) Freshwater wetlands and sewage effluent disposal, pp. 119-144. School of Natural Resources. University of Michigan, Ann Arbor, Michigan, USA.

Whigham DF & Simpson RL (1977) Growth, mortality, and biomass partitioning in freshwater tidal wetland populations of wild rice (*Zizania aquatica* var. *aquatica*). Bulletin of the Torrey Botanical Club 104: 347-351. USA.

Whigham DF & Simpson RL (1978a) The relationship between above ground and below ground biomass of freshwater tidal macrophytes. Aquatic Botany 5: 355-364.

Whigham DF & Simpson RL (1978b) Nitrogen and phosphorus movement in a freshwater tidal wetland receiving sewage effluent. Proceedings of Coastal Zone '78: Symposium on Technological, Environmental, Socioeconomic, and Regulatory Aspects of Coastal Zone Management. pp. 2189-2203. American Society of Civil Engineers, San Francisco, CA, USA.

Whigham DF & Simpson RL (1992) Annual variation in biomass and production of a tidal freshwater wetland and comparison with other wetland systems. Virginia Journal of Science 43: 5-14. USA.

Whigham DF, McCormick J, Good RE & Simpson RL (1978) Biomass and primary production in freshwater tidal wetlands of the middle Atlantic coast. In: Good RE, Whigham DF & Simpson RL (eds) Freshwater wetlands: ecological processes and management potential, pp. 3-20. Academic Press, New York.

Whigham DF, Simpson RL & Leck MA (1979) The distribution of seeds, seedlings, and established plants of arrow arum (*Peltandra virginica* (L.) Kunth) in a freshwater tidal wetland. Bulletin of the Torrey Botanical Club 106: 193-199. USA.

Whigham DF, Simpson RL, Good RE & Sickels FA (1989) Decomposition and nutrient-metal dynamics of litter in freshwater tidal wetlands. In: Sharitz RR & Gibbons JW (eds) Freshwater wetlands and wildlife, pp. 167-188. USDOE Office of Science and Technology Information, Oak Ridge, TN, USA.

Whigham DF, Baldwin AH & Barendregt A (2009) Tidal freshwater wetlands. In: Perillo GME, Wolanski E, Cahoon DR & Brinson MM (eds) Coastal wetlands: an integrated ecosystem approach, pp. 515-533. Elsevier Earth Sciences, Amsterdam.

Whitaker JO Jr & Hamilton WJ Jr (1998) Mammals of the eastern United States. Cornell University Press, Ithaca, NY, USA.

White DA (1989) Accreting mudflats at the Mississippi River delta: sedimentation rates and vascular plant succession. In: Duffy WG & Clark D (eds) Marsh management in coastal Louisiana: effects and issues, pp. 49–57. US Fish and Wildlife Service Biological Report 89, US Fish and Wildlife Service/Louisiana Department Natural Resources, Slidell, LA, USA.

White DA (1993) Vascular plant community development on mudflats in the Mississippi River delta, Louisiana, USA. Aquatic Botany 45: 171-194.

White JR & Reddy KR (1999) Influence of nitrate and phosphorus loading on denitrifying enzyme activity in Everglades wetland soils. Soil Science Society of America Journal 63: 1945-1954.

Whitehead FH (1971) Comparative autecology as a guide to plant distribution. In: Duffey E & Watt AS (eds) The scientific management of plant and animal communities for conservation, pp. 167-176. Blackwell Scientific Publications, London.

Whiting GJ & Chanton JP (1993) Primary production control of methane emission from wetlands. Nature 364: 794-795.

Whiting GJ & Chanton JP (1996) Control of the diurnal pattern of methane emission from emergent aquatic macrophytes by gas transport mechanisms. Aquatic Botany 54: 237-253.

Wicker AM & Endres KM (1995) Relationship between waterfowl and American coot abundance with submersed macrophytic vegetation in Currituck Sound, North Carolina. Estuaries 18: 428-431.

Wigand C, McKinney RA, Charpentier MA, Chintala MM & Thursby GB (2003) Relationships of nitrogen loadings, residential development, and physical characteristics with plant structure in New England salt marshes. Estuaries 26: 1494-1504.

Willebrand E, Ledin S & Verwijst T (1993) Willow coppice systems in short rotation forestry: effects of plant spacing, rotation length and clonal composition on biomass production. Biomass and Bioenergy 4: 323-331.

Williams J (1994) USA TODAY weather almanac 1995. Vintage Books, New York.

Williams JP (1982) Exploring the Chesapeake fringe. Small Boat Journal (June-July 1982): 39-44. USA.

Williams PB & Faber PM (2001) Salt marsh restoration experience in the San Francisco Bay Estuary. Journal of Coastal Research (Special Issue) 27: 203-211.

Williams PB & Orr MK (2002) Physical evolution of restored breached levee salt marshes in the San Francisco Bay Estuary. Restoration Ecology 10: 527-542.

Willis JM & Hester MW (2004) Interactive effects of salinity, flooding, and soil type on *Panicum hemitomon*. Wetlands 24: 43-50.

Willner GR, Chapman JA & Pursley D (1979) Reproduction, physiological responses, food habitats and abundance of nutria on Maryland marshes. Wildlife Monographs 65: 3-43.

Windham L & Ehrenfeld JG (2003) Net impact of a plant invasion on nitrogen-cycling processes within a brackish tidal marsh. Ecological Applications 13: 883-897.

Windham L & Lathrop RG Jr (1999) Effects of *Phragmites australis* (common reed) invasion on above ground biomass and soil properties in brackish tidal marsh of the Mullica River, New Jersey. Estuaries 22: 927-935.

Windham L, Weis JS & Weis P (2001a) Patterns and processes of mercury release from leaves of two dominant salt marsh macrophytes, *Phragmites australis* and *Spartina alterniflora*. Estuaries 24: 787-795.

Windham L, Weis JS & Weis P (2001b) Lead uptake, distribution, and effects in two dominant salt marsh macrophytes, *Spartina alterniflora* (cordgrass) and *Phragmites australis* (common reed). Marine Pollution Bulletin 42: 811-816.

Winkels HJ & Vink JPM (1993) Bodemopbouw, bodemkwaliteit en hoogteligging van de Biesboschpolders Mariapolder, Plattehoek en Vijf Ambachten. Flevobericht nr. 344. Directoraat-Generaal Rijkswaterstaat, Lelystad, NL.

Winn PJS, Young RM & Edwards AMC (2003) Planning for the rising tides: the Humber Estuary Shoreline Management Plan. The Science of the Total Environment 314-316: 13-30.

Winogrond HG & Kiviat E (1997) Invasion of *Phragmites australis* in the tidal wetlands of the Hudson River. In: Nieder WC & Waldman JR (eds) Final Reports of the Tibor T. Polgar Fellowship Program 1996, pp. vi-1 to vi-29. Hudson River Foundation, New York.

Winterwerp JC, Manning AJ, Martens C, De Mulder T & Vanlede J (2006) A heuristic formula for turbulence-induced flocculation of cohesive sediment. Estuarine, Coastal and Shelf Science 68: 195-207.

Wise CL & Fletcher CH (1986) Archaeology in the wetlands: managing an invisible resource. Proceedings of a Symposium on Waterfowl & Wetlands Management in the Coastal Zone of the Atlantic Flyway, Wilmington, Delaware, Delaware Department of Natural Resources & Environmental Control, Division of Fish & Wildlife, and the Delaware Coastal Management Program, USA.

Wittfogel KA (1957) Oriental despotism. Yale University Press, New Haven, CT, USA.

Wolanski E (2007) Estuarine ecohydrology. Elsevier, Amsterdam.

Wolf A (1988) Röhrichte und Rieder des holsteinischen Elbufers unterhalb Hamburgs. Schriften des Naturwissenschaftlichen Vereins für Schleswig-Holstein 58: 55-68. GER.

Wolf RJAM, Vrielink JG & De Waal RW (1997) Riverine woodlands in the Netherlands. Global Ecology and Biodiversity Letters 6: 287-295.

Wolfe DAE (ed) (1986) Estuarine variability. Academic Press, San Diego, CA, USA.

Wolff WJ (1968) The Mollusca of the estuarine region of the rivers Rhine, Meuse and Scheldt in relation to the hydrography of the area. I. The Unionidae. Basteria 32: 13-47. NL.

Wolff WJ (1969a) The Mollusca of the estuarine region of the rivers Rhine, Meuse and Scheldt in relation to the hydrography of the area. II. The Dreissenidae. Basteria 33: 93-103. NL.

Wolff WJ (1969b) Distribution of non-breeding waders in an estuarine area in relation to the distribution of their food organisms. Ardea 57: 1-28. NL.

Wolff WJ (1970). The Mollusca of the estuarine region of the rivers Rhine, Meuse and Scheldt in relation to the hydrography of the area. IV. The genus Sphaerium. Basteria 34: 75-90. NL.

Wolff WJ (1973) The estuary as a habitat – an analysis of the soft-bottom macrofauna of the estuarine area of the rivers Rhine, Meuse, and Scheldt. Zoölogische Verhandelingen, Leiden 126: 1-242. NL.

Wolff WJ (1999). Exotic invaders of the meso-oligohaline zone of estuaries in the Netherlands: why are there so many? Helgoländer Meeresuntersuchungen 52: 393-400. GER.

Wolman MG & Gerson R (1978) Relative scales of time and effectiveness of climate in watershed geomorphology. Earth Surface Processes and Landforms 3: 189-208.

Wondolowski L (2001) Diurnal activity patterns of wintering gulls at Jug Bay Wetlands Sanctuary, Maryland. MS Thesis, Bard College, Annandale-on-Hudson, New York.

Wright AL & Reddy KR (2001) Heterotrophic microbial activity in northern Everglades wetland soils. Soil Science Society of America Journal 65: 1856-1864.

Young JA, Palmquist DE & Wotring SO (1997) The invasive nature of *Lepidium latifolium*: a review. In: Brock JH, Wade M, Pysek P & Green D (eds) Plant invasions: studies from North America and Europe, pp. 59-68. Backhuys Publishers, Leiden, NL.

Yozzo DJ & Diaz RJ (1999) Tidal freshwater wetlands: invertebrate diversity, ecology, and functional significance. In: Batzer DB, Rader RB & Wissinger SA (eds) Invertebrates in freshwater wetlands of North America: ecology and management, pp. 889-918. John Wiley and Sons Inc, New York.

Yozzo DJ & Odum WE (1993) Fish predation on epiphytic microcrustacea in Tivoli South Bay, a Hudson River tidal freshwater wetland. Hydrobiologia 257: 37-46.

Yozzo DJ & Smith DE (1995) Seasonality, abundance, and microhabitat distribution of meiofauna from a Chickahominy River, Virginia tidal freshwater marsh. Hydrobiologia 310: 197-206.

Yozzo DJ & Smith DE (1998) Composition and abundance of resident marsh-surface nekton: comparison between tidal freshwater and salt marshes in Virginia, USA. Hydrobiologia 362: 9-19.

Yozzo DJ & Steineck PL (1994) Ostracoda from tidal freshwater wetlands at Stockport, Hudson River estuary: Abundance, distribution and composition. Estuaries 17: 680-684.

Yozzo DJ, Smith DE & Lewis ML (1994) Tidal freshwater ecosystems. Bibliography. Virginia Institute of Marine Sciences, Contribution No.1880. Gloucester Point, VA, USA.

Yozzo DJ, Anderson JL, Cianciola MM, Nieder WC, Miller DE, Ciparis S & McAvoy J (2005) Ecological profile of the Hudson River National Estuarine Research Reserve. National Oceanic and Atmospheric Administration. Annandale, NY, USA.

Ysebaert T, Meire P, Maes D & Buijs J (1993) The benthic macrofauna along the estuarine gradient of the Schelde estuary. Netherlands Journal of Aquatic Ecology 27: 327-341.

Ysebaert T, Meire P, Coosen J & Essink K (1998) Zonation of intertidal macrobenthos in the estuaries of Schelde and Ems. Aquatic Ecology 32: 53-71.

Ysebaert T, De Neve L & Meire P (2000a) The subtidal macrobenthos in the mesohaline part of the Schelde estuary (Belgium): influenced by man? Journal Marine Biological Association UK, 80: 587-597.

Ysebaert T, Meininger PL, Meire P, Devos K, Berrevoets CM, Strucker RCW & Kuijken E (2000b) Waterbird communities along the estuarine salinity gradient of the Schelde estuary, NW-Europe. Biodiversity and Conservation 9: 1275-1296.

Ysebaert T, Herman PMJ, Meire P, Craeymeersch J, Verbeek H & Heip CHR (2003) Large-scale spatial patterns in estuaries: estuarine macrobenthic communities in the Schelde estuary, NW-Europe. Estuarine, Coastal and Shelf Science 57: 335-355.

Zedler JB (ed) (2001). Handbook for restoring tidal wetlands. CRC Press, Boca Raton, FL, USA.

Zedler JB & Kercher S (2004) Causes and consequences of invasive plants in wetlands: opportunities, opportunists, and outcomes. Critical Reviews in Plant Sciences 23: 431-452.

Zettler ML & Glöer P (2006) Zur Ökologie und Morphologie der Sphaeriidae der Norddeutschen Tiefebene. Heldia 6 (Sonderheft 8): 1-61. München, GER.

Ziegler SE & Fogel ML (2003) Seasonal and diel relationships between the isotopic compositions of dissolved and particulate organic matter in freshwater ecosystems. Biogeochemistry 64: 25-52.

Zonneveld IS (1960) The Brabantsche Biesbosch. A study of soil and vegetation of a fresh water tidal delta. PhD Dissertation, Wageningen, NL.

Zonneveld IS (1999) De Biesbosch een halve eeuw gevolgd. Staatsbosbeheer / Uitgeverij Uniepers, Abcoude, NL.

Zwolsman JJG (1994) Seasonal variability and biogeochemistry of phosphorus in the Scheldt estuary, South-West Netherlands. Estuarine, Coastal and Shelf Science 39: 227-248.