

## Chapter 2

# Shipping Mishaps and the Maritime Cultural Landscape

*Above all, it should be noted that the primary object of study is man [sic] ... and not the ships, cargoes, fittings or instruments with which the researcher is immediately confronted. Archaeology is not the study of objects simply for themselves, but rather for the insight they give into people who made or used them ... maritime archaeology is concerned with all aspects of maritime culture; not just technical matters, but also social, economic, political, religious and a host of other aspects.*

Muckelroy (1978: 4)

Since the 1980s, there has been an ongoing dialogue within maritime archaeology encouraging a shift away from its vessel-focused concerns towards an anthropological interest in the wider maritime world (Gould 1983). Despite this, there has until recently been a dogged persistence of the traditional culture-historical approach towards vessels and their contents (or their archaeological remnants), and the narrow technological, economic and social contexts of their operation and use. In this older conception, behaviours surrounding the shipping mishap event (mostly wrecking) are usually viewed in isolation and for their historical value, or as indicators of the transformation of the vessel from systemic to archaeological context. Subsequent cultural interactions with the remains of vessels or surrounding environments are primarily considered as site formation processes altering the integrity of the site, or as subjects of concern for cultural resource managers, rather than as part of a continuum of cultural activities and connections (Gibbs and Duncan 2015). Non-wreck components of the maritime world have suffered similar treatment, often being recorded without strong connection or contextualization within the wider cultural system or landscape past or present.

In part, the shape of maritime archaeology has been a function of the constraints of practitioners working within particular legislative or corporate structures (i.e. the role of the heritage agency or museum-based archaeologists is to record and protect shipwrecks rather than do wider research), or simply that shipwrecks have been prioritized as the most threatened form of maritime site. The greater set of maritime sites, especially those on land or in intertidal zones, also often fall into a grey area of responsibility with other heritage agencies, groups or academic subdisciplines with their own priorities. The consequence is that for many areas, there are now rich

data sets on shipwrecks, with countless non-wreck, terrestrial and intertidal maritime sites still waiting to be identified, recorded and incorporated into the maritime archaeological narrative.

The challenge we face is how to re-conceive the aims of maritime archaeology and create new approaches that allow us to achieve multiple goals: a refocusing of priorities towards a more inclusive form of maritime archaeology which acknowledges the need to record and protect an extended range of sites and places; the recording, interpretation and synthesis of this material within a coherent framework that also facilitates comparative analysis; and the greater incorporation of anthropological concerns into our studies of the maritime world. This includes making best use of the methods and extensive data sets which are already available to us from nearly 50 years of professional maritime archaeology. The emergence of academic maritime archaeology over the last two decades, usually nested within broader archaeology and anthropology programs, has seen an appreciable shift in direction. This has especially been bolstered by the completion of higher degree theses, many exploring new theoretical and analytical structures which incorporate and synthesize existing and new data while embracing links between land and water. Published versions of these studies are also becoming available and fuel the possibilities for comparative research (e.g. Dellino-Musgrave 2006; Richards 2008; Stewart 2011).

The following section sets out the framework for how we have approached the investigation of the Queenscliffe community's responses to shipwreck past and present. In many respects, it represents an experiment in unifying the several theoretical and methodological avenues which we have followed separately and as collaborators in our explorations of how maritime archaeology might advance. In particular, we examine how these different approaches might be incorporated within a cultural landscape framework, although here we use the term *maritime* cultural landscape to emphasize the connections between land and sea. For the sake of brevity, we have summarized parts of our argument and refer the readers to our own and others' published and more detailed works elsewhere.

## **Maritime Cultural Landscapes and the Archaeology of Maritime Communities**

The origins of the notion of a cultural landscape are reviewed extensively elsewhere and need not be repeated here (e.g. Hoskins 1955; Sauer 1925; Meinig 1979a, b; Ingold 1993; Tilley 1993; Bender 1992; Anschuetz et al. 2001; Westerdahl 1991, 2003a, b; Duncan 2006: 7–37). Consideration of maritime cultural landscapes simply extends this concept to include the non-terrestrial world, although in truth, the distinction may not be necessary. The works of Westerdahl, Jasinsky and Parker on European maritime systems have provided the basis for many of the current studies of maritime cultural landscapes by introducing a range of concepts not

usually employed in maritime archaeology, such as cognition, cultural traditions or symbolism.

Inspiration and direction on how to view how maritime cultures might construct their land–sea relationships can also be drawn from beyond the European world (e.g. Hunter 1994; Westerdahl 1994). A particularly important source for the authors has been the work of anthropologists Hviding (1996), McNiven (2003), and others (Lewis 1980, 1994; Johannes 1992; Roe et al. 1994; Roe and Taki 1999), including the authors' own research with Indigenous groups in Australia and the Pacific. One of the important understandings is how many of these maritime groups simply see continuity regardless of the different physical environments, with seascares being perceived, understood, owned and used in the same way as landscapes. Reflecting back on many Western maritime practices sometimes reveals very similar mind-sets and a strong interplay between the resources, activities, signs and symbols between land and sea. Significantly, these non-Western studies explore as a matter of course the non-physical components of cultural landscapes, such as myths, folklore, toponymy and associated stories, and other specialized local knowledge (all of which were often used to validate territorial ownership, community identity and belonging to place). These cognitive aspects have often been divorced from Western cultural landscape studies until recent years.

Without engaging in the ongoing discussion of what constitutes a maritime culture (see Hunter 1994; Westerdahl 1994; Parker 1995), this volume uses the expression *maritime communities*. Westerdahl (2011: 337) has recognized this as a more apt term as it stresses the social aspects and societal connections of those whose life is based in, on or around the sea or waterways.

Cultural landscapes are also heavily influenced by the perspective of those who inhabit a region and of the researchers who investigate them. Westerdahl (2002a: 169) proposed that there were many types of cultural landscape including *economic, transport, power, ritual and resources landscapes* and that these landscapes transcended the land/sea divide and overlapped each other. This notion of alternative perspectives was also recognized by Crumlin-Pederesen (1996 as cited in Parker 2001: 23) who expounded that the main objective of maritime archaeology should be “to learn to perceive the landscape and settlements as they were seen with the eyes of the sailor or fisherman in the past, approaching land from the sea or from navigable rivers”. Indeed, Goldsmith Carter (1945: 22) demonstrated that different perspectives of the same place by the same person may be held dependent on whether the view from is from the land or sea. These different viewpoints have also been recognized as influencing the researchers' approach to cultural landscapes investigations. Jasinsky (1999: 13) has shown that the differences between maritime and terrestrial archaeology lie in the perspectives of the sea, suggesting that “terrestrial archaeologists...stand on the shore with their backs to the sea, using the inland as the background for their documentation. Maritime archaeologists generally do the opposite”.

Despite various studies explaining the patterning behind the distribution or nature of shipwrecks and maritime facilities, the maritime landscape approach is still in its early stages. Many recent studies have been oriented around particular

industrial operations and workforces, or synthesis and explanation of the distribution and nature of shipwreck or maritime infrastructure within an area or region (Ford 2011).

## **Key Components of Cultural Landscapes**

In order to progress this argument, it is necessary to understand what does and does not constitute a maritime cultural landscape. Duncan (2006: 13–34) has compiled an outline of key aspects of maritime cultural landscapes, which are summarized below.

### ***Landscapes Are Physical and Cognitive***

Many archaeologists who investigated landscapes have predominantly focused on physical archaeological remains and other structural aspects, rather than social and metaphysical dimensions. Cultural landscapes include a whole suite of cognitive perceptions intrinsically tied to landscape construction and expression and are based on the relationships between individuals and communities, belief system and values, and how these translate into the cultural and environmental world which they occupy (Darvill 1999: 104). This concept of *cultural landscape* embraces themes that are experienced *both* physically and cognitively by those who use maritime or coastal areas. This is the crux of the concept that distinguishes true maritime cultural landscape studies from those that essentially embody either regional inventories of submerged cultural resources and archaeological sites (and often individual sites) or heritage management studies of maritime sites and/or areas. True maritime cultural landscape studies are therefore not only descriptive of maritime sites and community actions, but should also delve into the sphere of values and belief systems to explore the cognitive aspects of maritime communities.

### ***What Cultural Landscape Is Not***

It is useful at this stage to define what a cultural landscape is not. In particular, cultural landscape is not synonymous with land. Ingold (1993: 153) has demonstrated there is a difference between the actual physical landscape (land) and the physical use and intangible perceptions of it (cultural landscape). Even though many physically different regions form the totality of individuals' or groups' worlds, these environmental/perceptual settings are usually divided according to how people use/perceive them, with each used in different ways. What this means is that we need to question any academically imposed or simplistic notions of

landscape which are based on binary oppositions (e.g. land/sea, natural/cultural, static/dynamic) which differentiate between sources of data based on physical location and/or historical analytical research notions/directions. At the same time, we need to recognize the perceptive differences between landscape components as comprehended by the actual landscape participants themselves. Landscape cannot therefore be divided, as cultural landscapes are seamless and filled with meaning. Further discussion of these points is available elsewhere (Duncan 2006: 13–17).

### ***Land Versus Sea Divide***

The differentiation between land and sea is largely irrelevant in a cultural landscapes approach, as all areas regardless of their geographic locality (i.e. underwater, above water or land based) are considered essential components of the totality of the landscape. For example, at Marovo Lagoon, Pacific islanders do not differentiate between land and sea areas. So-called “terrestrial” Indigenous landscapes did not stop at the tidal interface, but extend out over the water to include territorial areas of traditional “sea land” (e.g. Hviding 1996: 1, 233–238). Cultural practices and beliefs were equally deeply embedded in the land and sea. This notion also has utility to western maritime landscapes where, although the physical boundary of one environment delimited the beginning of the next, neither could be understood without reference to the other (Westerdahl 2000: 3). The fact that the data sets were derived from either terrestrial or maritime environments is irrelevant, because as perceived by their users, they were collectively components of the same landscape.

### ***Landscapes Are Continuous, Dynamic and Evolve Over Time and Space***

Cultural landscapes are not static phenomena (as proposed by Hoskins 1955), as existing physical structures and the social practices and beliefs of ancestral or former communities are constantly incorporated into modern cultural landscapes (Jackson 1951). This continual re-appropriation and evolution generates dynamic landscapes as people adopt and adapt to ongoing change (Meinig 1979a; Darvill 1999: 107). Modern and archaic landscape features are therefore complementary parts of a continuing landscape, and analysis of the type and location of change in a landscape may further inform of the cause of those transformations. Cultural landscapes therefore do not always have a terminal point, but represent continuous trajectories from the past into the present and beyond to the future. Similarly, they are not spatially constrained. These approaches also have great utility for maritime studies, particularly in regard to the spatial migration of maritime activity within the physical landscape (Westerdahl 1998: 9; Parker 1999).

### ***Landscapes Are Multivalent and Overlapping***

The notion of cultural landscapes has evolved to recognize the role of perception (Meinig 1979b) and phenomenology (Ingold 1993, 2000; Tilley 1994; Westerdahl 1994) in landscape construction. People will experience any region differentially dependent on their individual or shared communal experience. Accordingly, there will be multiple (and often overlapping) cultural landscapes. These “multivocal” landscapes may not be bounded by the same geographic regions or time periods. They might coexist independent and/or interdependent of other cultural landscapes (users), and failure to recognize this is an inherent weakness in some archaeological studies (Bender 1992: 1, 9). The crux of this observation is the notion that it is people who create cultural landscapes, both physically and cognitively, and that all landscapes are the result of personal perception. These notions of multiple overlapping and often conflicting cultural landscapes have great utility for exploring the possible changing multiple perspectives of shipwreck sites (Gibbs 2005).

### ***History Is Tied to Cultural Landscapes***

The notion of cultural landscapes acknowledges that people tie life, events and continuity to place and that this is evident in narratives that have connections to the environment (Ingold 1993: 153–155). Several Melanesian studies have observed the importance of anchoring and indexing of history through the association of narratives with named places in the landscape (e.g. Roe and Taki 1994: 413; Hviding 1996). By travelling through the landscape, mariners reinforce their attachment to it, by recalling their own ancestral cultural history which is encoded in their knowledge of oral histories, folklore and toponymy (Mead 1973; Harwood 1976).

### **Other Landscape Components**

Although the points outlined above are widely accepted as key aspects of cultural landscapes studies, we also advocate that other notions previously used in terrestrial studies should also be included in any maritime cultural landscape research.

### ***Landscapes of Movement (Sailing Routes)***

Routes are important landscape components as they not only provide connections through the landscape (sometimes guided by stories or song lines linking places and events), but are in themselves centres of activity that are imbued with meaning and

tangible/intangible substance (Ingold 2000: 237). By developing a serial mental map that recalled the progression of these “natural”/artificial features and their associated stories and meanings (especially for submerged or offshore features), mariners reinforced and reinvented their cultural landscapes while travelling along their own personal sailing routes (Roe 2002; Westerdahl 1991; Parker 2001: 33).

### ***Empty Space Is a Significant Landscape Feature***

Empty space is a key component of landscape construction. It can be used to draw attention to other landscape features (e.g. without the void surrounding it, the aesthetic power of Stonehenge would have been lost behind a forest of trees (Bender 1992: 5, 8). Alternatively, it can exclude access to others (thus reinforcing social boundaries and hierarchies of power), an authoritative power notion that has been observed in relation to “tapu” (or sacred) areas and other territorial restrictions (see Hviding 1996: 250–258; Meyers et al. 1996: 7; Dale et al. 1999). The “construction” of empty space (whether on land or at sea) therefore constitutes a socially significant landscape feature (Duncan 2006: 21).

### ***Authoritarian Structures Create Landscapes of Power and Resistance***

Control of populations is a key component of organization within many societies (McGuire 1991), and thus, authoritarian structures represent key mechanisms for landscape development. In a maritime setting, official control mechanisms may be exercised in many forms such as defence, policing, Customs, quarantine, pilotage, immigration or even religion (Westerdahl 2002a: 169–177; 2003a: 482). Power landscapes by their very existence in some instances also produce “landscapes of resistance”, where inhabitants within or adjacent to those regions resisted that authority (Westerdahl 2002a: 169). The landscapes of power and resistance present interesting possibilities for investigation of social interaction between thematic maritime groups.

### ***Technological Change Is a Dynamic Factor in Landscape Evolution and Change***

Technological advancement is an important factor on landscape evolution and practice (e.g. Clark 1987). Developments in vessel designs and associated technology often markedly altered traditional maritime practices (e.g. the change from

steam to sail, as well as increasing vessel size) and hence landscape boundaries and perceptions (Parker 2001; Irwin 1992; Lewis 1994). This notion has particular resonance when examining the effects of technological change on the incidence of shipping mishaps, both from a risk management and vessel design perspective.

### ***Actions and Events Are as Important as the Archaeological Signatures They Generate***

Bender (1992: 8) has demonstrated that an act or event that created a landscape feature was often as (or more) important than the subsequent material remains (e.g. the digging and infilling of trenches for votive offerings). In other words, an act or event may be the primary focus of the landscape participant(s), and the resulting archaeological signature may only be an inconsequential and unvalued by-product. Often these aspects are only accessible through folklore, oral histories and toponymy. However, this situation may also work in reverse, where the event has been the main focus of research, but that to the landscape user, the site that is produced is of prime significance. This is particularly significant for this volume in regard to the effects of events (in this case shipping mishaps) on local communities.

### ***Alternative Sensory Perceptions and Ancestral Knowledge Are Key Indicators of Landscapes***

Landscape perceptions are not limited to visual stimuli and should include the other senses, such as smell, touch, sound and taste (Ingold 1993: 170; Darvill 1999: 107). Many studies have documented the importance of these senses by territorial mariners (when used in combination with ancestral knowledge) as essential memory cues for landscape navigation and recognition, spatial orientation and weather recognition (Gladwin 1970: 171–172; Johannes 1992; Hunter 1994: 262; Lewis 1994; Parker 2001: 32–36). Reflected sounds and smells have all been used as portents of the approach to land (Parker 2001: 36; Kerr n.d.) and are key elements of landscape research.

### ***Environmental Change Shapes and Is Shaped by Cultural Landscapes***

Landscapes are subject to both ecological/biological and physical environmental change as a result of cultural, climatic and geological influences and disturbances. Although many “landscape” studies are actually investigations of geographic change and coastal geomorphology, these aspects in themselves are key components of



landscape determination and transformation. In other words, although physical landscape may influence human action, human action also affects physical landscape, in an ongoing and often repetitious cycle.

### ***Social Hierarchy Plays a Key Role in Landscape Formation and Change***

The role and complexity of social relations have pronounced effects on landscape construction, particularly where differences in geographical location and elevation were used to reinforce class hierarchy ideologies (Gibbs 1997; Mrozowski et al. 1996). Landscapes also epitomize and reflect the changing societal structure and status present in various scales of community (Aston 1985; Bender 1992: 3; Perry 1999). This aspect is particularly relevant for maritime communities, where access to ancestral nautical knowledge was often used to distinguish between social classes (Irwin 1992: 220; Lewis 1994: 32–34, 244–245) or where social hierarchy was based on maritime profession (Westerdahl 1998: 9, 2003b: 18).

### ***Alternative Landscapes Can Be Accessed Through Gender Studies***

Gendered studies of Western historic maritime communities have only recently begun to emerge (Lydon 1993; Adams 2001: 304–305; Flatman 2003), but have long been common in Indigenous studies (e.g. Bowdler 1976). Even though women did not traditionally go to sea on vessels to work (Westerdahl 2002b: 54, 2003a: 475), they still played an active part in the fishing industry (e.g. O’Sullivan 2001: 261) and often became the *de facto* heads of households while men were away at sea (Flatman 2003: 3; Duncan 2006: 206). Given that almost every maritime community worldwide included women who were related to seamen and fishers or actively involved in the industry, gender studies clearly present another opportunity to further investigate different perspectives of maritime cultural landscapes.

### ***Cultural Practices, Ideologies and Beliefs Are Transported Along with People***

Whenever people immigrate to new lands, they take their cultural baggage with them. Researchers in the Pacific (Gladwin 1970; Lewis 1980, 1994; Irwin 1992;

Gosden and Head 1994: 114) and Northern Europe (Westerdahl 2003a: 481) have shown that the establishment of new maritime settlements often led to expanded networks of communities which shared similar (ancestral) practices and beliefs. These transported landscapes included not only physical manifestations (e.g. economic food sources and material culture), but also cultural practices, beliefs and ideologies, an observation also made of modern Western immigrants moving to new lands (e.g. Thoreau 1865; Gibbs 1995: 23; 1997). Maritime communities were particularly inclined to relocate their shore-based activities in response to the movement of seasonal resources (see Duncan 2006), and therefore, the study of transported landscapes offers the potential to examine cultures that stretch over vast distances and time. The processes of continuing (adapting), creating or rejecting existing beliefs and practices deserve consideration, as do instances where newly formed communities where diverse members bring different cultural traditions with them engage in processes of accommodation and synthesis. This is particularly relevant when investigating colonizing and diaspora communities of the New World and Australia, including their relationships with Indigenous communities and their bodies of knowledge.

### ***Ritual, Superstition and Symbolism Play a Vital Role in the Determination of Landscapes***

Religion, superstition, spirituality, and their roles in shaping cognitive landscapes either through associated ritual practices and observances, or through restricting or requiring access to particular areas, has been a common theme in landscape studies (e.g. Hunter 1994; Parker 1999, 2001; Westerdahl 2003a). Although the substance varies, these phenomena form components of powerful belief systems that are present in every culture on earth and are particularly prevalent in maritime communities which are noted for the entrenchment of superstition and mythology (Jasinski 1999: 14; Jeans 2004: 304). Many belief systems were grounded in superstitious practices, which in some cases have left tangible archaeological remains (e.g. Evans 1966; Dean 1997; Anonymous 2000; Eastop 2001; Hoggard n.d., 2004), making superstition an essential landscape component for investigation.

### **Maritime Cultural Landscapes and Shipwrecks**

A cultural landscape approach enables shipping mishaps to be viewed from multiple perspectives, both as an event and as a place. For instance, a shipwreck may initially be perceived as a catastrophe and as such is the cause for frantic activity to

save life and cargo. Simultaneously, the incidence of wreck might also represent the creation of a new place in the landscape, which fills or reconstitutes the space/place that preceded it. The wreck may embody multiple meanings to different people, as economic or social resources, through their tangible and symbolic representations of historical events, as memorials of significant incidents, or as contested space through conflicting uses. Use and significance might also transform over time (Gibbs 2005). Other sites may in turn be generated as material is removed, reused or discarded elsewhere, or are created in response to the occurrence of the event, such as mechanisms to prevent, mitigate or benefit from future shipping mishaps. As an archaeological essay, a large part of this research has been to consider not just the behaviours of the Queenscliffe community in response to shipping mishaps, but to understand some of the physical manifestations of those responses and their associated archaeological signatures.

Another theme in this work has been to understand how shipping mishap-related activities and relationships, including connections to sites and places, became structured into the community as “traditional” practices grounded in shared understandings and informal codes of conduct. In this respect, our definition of tradition and traditional practice follows Knowles (1997). Based on the work of Cohen (1985: 99) and others, she suggests that “traditions are the ways in which communities define themselves through a symbolic past in the present” (Knowles 1997: 14). However, traditions are not necessarily defined by temporal depth, duration or an unchanging nature. Although there may be a sense of continuity, grounded within the mythological character of the tradition or its origins, there are often social mechanisms which also allow for change, re-creation or reproduction while allowing the community to retain it as a defining element of the group (Knowles 1997: 15). Most relevant to our work is Knowles’ suggestion that tradition is often based upon shared practices and experiences, some of which are spatially specific and create strong attachments to particular places and (by extension) landscapes as well. The practices that occur at those places may be a symbolic expression of community.

### ***Behaviour in Response to Shipping Crises: A Model***

One of our concerns has been to construct an anthropological approach to shipping mishaps that considers not only the original operational elements of a vessel, but also the nature of the crisis event, its aftermath and the archaeological consequences of these. Previously, we have set out a sequence of stages associated with the progression of shipping mishaps, primarily catastrophic shipwreck, drawn from the models used in disaster studies (Gibbs 2002, 2006—Fig. 2.1). Following the work of Leach (1994), the main stages include the following:

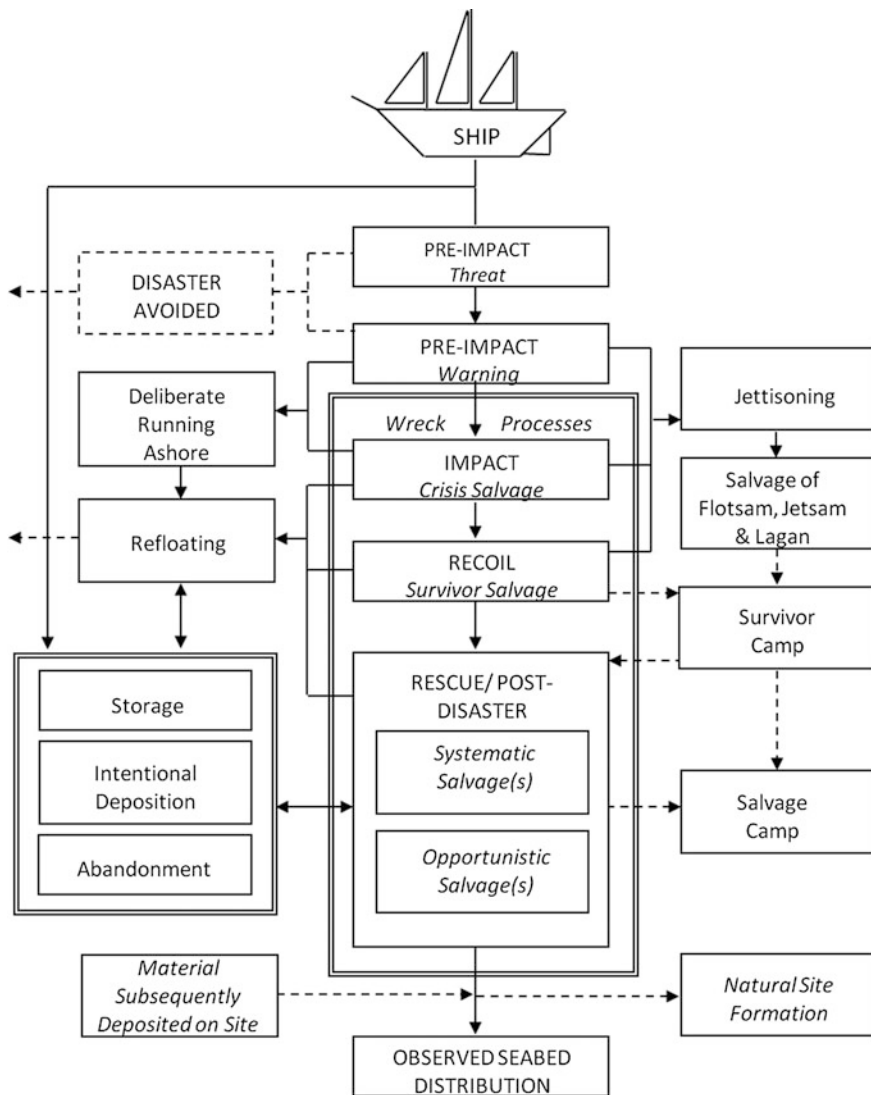


Fig. 2.1 Stages of response to shipping mishaps (Gibbs 2006)

- **Pre-impact:** the period before the disaster event. This can be divided into two phases:
  - **Threat:** when the possibility of disaster is identified (long term).
  - **Warning:** when the disaster is imminent.
- **Impact:** during the disaster “event” and immediately afterwards.
- **Recoil:** when the immediate threat to life has receded.
- **Rescue:** when the person or group is removed from danger.
- **Post-trauma:** medium- to long-term responses to the disaster.

The Pre-impact stage could have a very long-term Threat aspect, involving recognition of risk and corresponding pre-trip preparedness such as through selection or technological development of appropriate vessels, choice of route, training of crew, stowage of materials and maintaining lookouts. The Warning phase was when some of this preparedness (or lack thereof) would come into play through reaction to imminent disaster, including efforts to avert or mitigate impact. It was also the first point where there might be an interface with a coastal community trying to assist in various ways.

The sequence continues through the point of impact and the critical decisions and responses which might save or lose the vessel, its cargo or the people aboard. Even after the conclusion of the actual crisis, there are potential medium- and long-term actions after the main crisis event.

The role of subsequent rescue attempts and possible official salvage claims to the wreck can also be considered, followed by stages of physical salvage at both official (systematic) and illegal (opportunistic) levels, and distinct behavioural practices associated with medium- to long-term exploitation of the wreck (Fig. 2.1). There are archaeological correlates from cultural modification or dispersal of the ship structure or contents during the different stages. An extension to the original model was an analysis of the responses and material strategies of shipwreck survivors which also paralleled and meshed with these stages (Gibbs 2003).

An important factor in the model, given its roots in disaster studies, is the recognition of cultural, social and psychological factors in responses during each phase. These varied between individuals and groups depending on the nature of the event and their perspective(s). It is also important to recognize that the time frame or duration for each stage is not equal. Pre-impact and Post-impact (recovery and post-trauma) stages may continue over many years and, in the context of how coastal unities respond, may even extend over centuries. The latter is particularly true for aspects of salvage and reuse of the different physical components of the vessel's structure and contents. However, the middle part of the sequence (Warning, Impact and Recoil) may be extremely rapid, potentially lasting only hours or even minutes. It is conceivable that some stages (especially pre-impact Warning) may be missed altogether, while others are dependent on a range of factors including the intensity and circumstances of the event, prevailing environmental circumstances, proximity to settlements, etc.

The behavioural stages and the archaeological correlates proposed in the shipping crisis model are not meant to be absolute or proscriptive, but simply provide a way of introducing a structure which might encourage a comparative (and more culturally oriented) approach to the archaeological analysis of shipping mishaps. The intention is also to move the analysis of shipping mishaps from the traditional view of a singular and unique "event" to a series of ongoing behaviours and cultural processes analogous to the natural processes which have been the focus of most site formation studies in maritime archaeology (Murphy 1997; Stewart 1999; Wheeler 2002; Martin 2011). Both the original wreck model and the survivor camp model have been tested by other researchers with reference to their own sites (Stanbury 2003; Nash 2004; Wilde-Ramsing 2009).

Whereas the original shipwreck disaster response model was from the perspective of those within the event (i.e. on the vessel), in this volume we explore the complementary responses from those external (at least initially) to the core disaster event, primarily those ashore. We argue that coastal communities shared, or at least experienced, parallel stages in relation to disaster preparedness, short-term response and long-term impact. We also introduce here the distinction between what might be considered altruistic actions (i.e. those concerned with the welfare of others) versus exploitative responses (i.e. primarily intended for economic or social gain). We do, however, recognize that there were instances where the boundary was blurred, or transformed from one to another, or encompassed elements of both. As for the original model, we are also concerned with how these behaviours might manifest within the cultural landscape and especially as sites and places.

### *Role of Risk in Maritime Cultural Landscapes*

Duncan (2000, 2004) has previously explored the role of risk perception, risk taking, avoidance and mitigation in mariners' and coastal communities' behaviours as a factor in their responses to shipping mishaps. Risk is defined as "a negative or undesirable outcome... synonymous with the term danger or hazard" (Fox 1999: 12). Following Crook (1999), it can be proposed that there are two basic risk management strategies:

- **Neo-Liberal risk management:** Provides community members with an adequate level of information about the inherent risk levels, but leaves the individual to judge the acceptable level of risk taking. A modern parallel might be surf life-saving flags on a beach which indicate the dangerous areas, but leave choice of risk exposure up to the individual. This contrasts to the following;
- **Ordered risk management:** Occurs when a society chooses to control or limit exposure to risk, such as through total prevention of access to perceived dangerous areas. A modern equivalent might be to exclude access to and around a nuclear bomb site.

Mariners' recognition of risk and potential hazards and their consequent reactions to these (i.e. risk mitigation) were significant factors influencing the specific locations and overall distribution of shipwrecks and their subsequent cultural landscapes. Awareness of risk and hazard is a function of perception and knowledge of the natural and cultural environments, conceivable as falling into one of three types (Duncan 2004: 14–15):

- **Actual Risk:** the real, tangible risk presented by actual hazards is based on past cultural knowledge, experience or exposure to danger (e.g. environmental risks that contributed to shipwrecks).
- **Perceived Risk** (or associated risk): where perceptions of the level of danger influenced how an area was perceived, and hence whether it is used (or not).

Perceived risk does not necessarily reflect actual risk levels, but may be prejudiced by singular isolated catastrophic events or superstition; and

- **Manufactured Risk:** situations where actual risk factors or danger levels were exaggerated or fabricated in order to influence perceptions of that risk, and hence the subsequent use of an area.

Risk mitigation is therefore behaviour based around the avoidance of exposure to hazards, dictated by a society's (or individuals' and groups') conscious or unconscious decisions to follow ordered versus neo-liberal risk management strategies. The types of risk presented and potential risk management or mitigation do not rest purely with the ship's master and his or her decisions on vessel, route or actions, but also in the preparedness and responses of coastal communities. This might include formal and informal mechanisms such as bathymetric surveys and charts, sailing directions or the provision of local knowledge, navigational facilities (Lighthouses, channel markers, tidal and communication facilities and Pilot Services), the installation of rescue and safety equipment (e.g. rescue rockets, lifeboats, tugboats) and other processes should a disaster be imminent or in progress.

For mariners and coastal communities major influences in considerations of risk were the social and economic costs versus benefits behind decisions to take (or allow, or not manage) risks, against investing in their avoidance, prevention or mitigation. For ships' masters, taking on an increased risk (such as ignoring certain sailing directions) might mean for instance a faster passage and greater profit. For a coastal community, there might be a desire to ensure their harbour was safe or at least not perceived as too hazardous, which might reduce traffic, against a potential desire (by some) to make gain from ship repair or salvage (Duncan 2004). Risk might also have a seasonal aspect depending upon the changing weather and environment, meaning different responses and mechanisms were necessary at different times. All of these factors had the potential to influence the development of physical and cognitive cultural landscape(s) on land and sea. Figure 2.2 demonstrates the potential cyclic nature of risk management caused by shipping mishaps in a region.

When considering the circumstances of shipping mishaps, we would also suggest that it is necessary to contemplate the degree to which perceptions and evaluations of risk, as well as decisions and actions in response to impending or realized incidents, were in response to legalities and other factors such as insurance. Most mariners were well aware of the long-term implications for financial loss, legal culpability and penalty should they be found at fault in their decisions and conduct relative to a shipping mishap. The delineation of risk and liability, the responsibilities of a ship's master and crew, and the appropriate priorities, actions and expectations with regard to dealing with structure and cargo given particular circumstances were usually well documented (e.g. Hopkins 1867; Gow 1917; Hardy Ivamy 1974; Gibbs and Duncan 2015). So too were the circumstances and conditions for the sale or disposal of salvaged structure and goods, and the disbursement of profits.

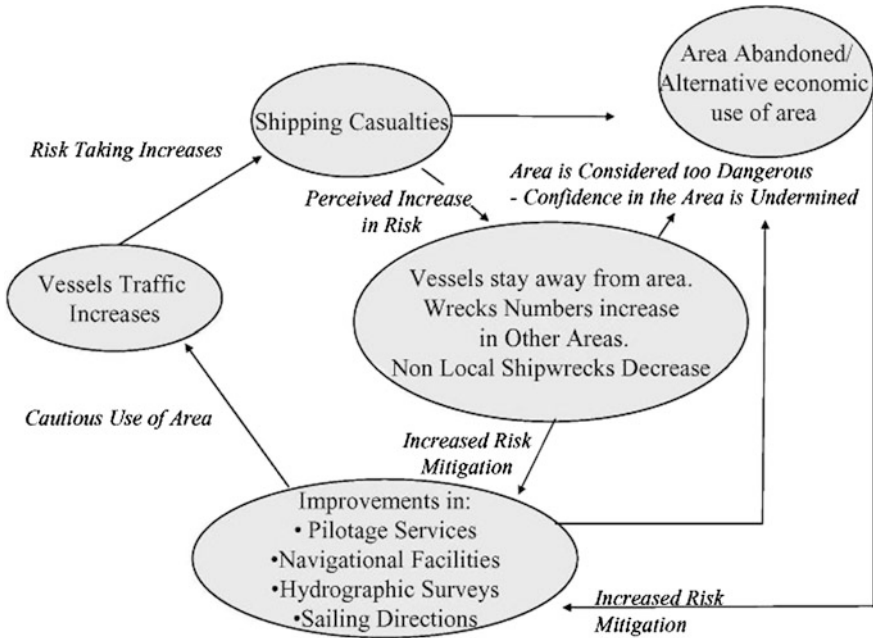


Fig. 2.2 Risk mitigation processes (Duncan 2000)

The various international and local codes regarding salvage rights usually balanced ownership of the vessel and cargo against the risk and real danger experienced by the salvors (due to environment, weather or circumstances) and the services they provided in the recovery of property (e.g. technologies and labour used, efficiency of recovery) (Brice 2003; Mandaraka-Sheppard 2007). Consequently, it might be argued that some (or many) of the behaviours exhibited during and after shipping mishaps were not simply to secure the safety of vessel, cargo and people, but attempts to work within or around various laws or insurance codes. This could extend to deliberate attempts to exploit situations such as insurance fraud through deliberate use of worn or unseaworthy vessels (c.f. Murphy 1983: 75), or balancing the expense of the loss of vessel and cargo against possible benefits from insurance claims (c.f. Souza 1988).

### Defining Shipping Mishaps

A further contribution from marine insurance and broader maritime literature is how we might define shipping-related processes in ways that were consistent with historical understanding and usage. For instance, unlike the modern usage of the generalized phrase “shipwreck”, Marine Underwriters tended to categorize marine



**Table 2.1** Vessel incidents and losses (after De Kerchove 1961)

Category	Definition
Collisions	The vessel collides with another vessel or structure
Groundings	The vessel collides with the seabed causing damage to structure
Stranding	The vessel runs aground but remains partly or wholly above water. There are two types of strandings
Accidental stranding	The vessel collides with the seabed
Deliberate stranding	The vessel is deliberately steered ashore into shallow water to avoid becoming an Actual or Total Constructive Loss
Abandonment	Only takes place under stipulated conditions where it is recognized that the ship, cargo and lives of those onboard were under imminent threat
Total Constructive Loss	The vessel is in imminent danger of becoming an Actual Loss and is abandoned accordingly
Actual Total Loss	The vessel is destroyed and ceases to be recognizable as its original function as a ship or boat

incidents in terms of degrees of economic loss from loss or damage to structure or cargo (Table 2.1). Similarly, materials resulting from a shipping incident are well defined (Table 2.2). In instances where deaths occurred, there were additional social implications and definitions which will be dealt with elsewhere in this volume.

Financial losses and deaths were not just confined to Actual Total/General Average or Total constructive losses (i.e. shipwrecks), but also occurred during strandings, groundings or collisions. Many contemporary accounts have revealed that vessels which were grounded or stranded were subsequently refloated, often after large quantities of their cargo was thrown overboard. This raises the question as to whether this loss of cargo is also a shipping casualty. In terms of marine

**Table 2.2** Shipwreck materials (after De Kerchove 1961)

Category	Definition
Wreck	Anything without an apparent owner, afloat upon, sunk in or cast ashore by the sea... includes jetsam, flotsam, lagan and derelict
Jettison	The act of throwing goods overboard to lighten a ship or improve stability in stress of weather or in any other cases of necessity or emergency
Wreckage	Goods cast ashore after a wreck. Four basic types
Jetsam	Goods jettisoned for the preservation of the ship and cargo
Flotsam	Goods that float when cast overboard for the safety of the ship or after the vessel has foundered
Lagan	Goods cast overboard from a sinking vessel and buoyed as to be subsequently recovered
Derelict	Goods (including personal property) abandoned or relinquished by its owner, specifically a vessel abandoned at sea. A ship is derelict either by consent, compulsion or stress of weather
Salvage	Property that has been recovered from a wrecked vessel, or the recovery of the vessel herself

underwriter insurance, the answer would most definitely be “yes”, as any loss of property associated with the incapacitation of a vessel has significant economic implications to the owner, crew and passengers and any other interested parties within the community. Previously, we have suggested that stranding sites should receive greater attention from maritime archaeologists (Duncan 2000, 2006), being in effect “phantom shipwrecks...the ones that got away” (Gibbs 2006: 10) and that jetsam and flotsam from these sites were likely to leave large archaeological signatures. Unfortunately, as strandings by their very nature are defined by ships sailing away or otherwise removed from the site of impact, these locations are often not as well documented as shipwreck sites, and until recently there has been the perception that stranding sites do not have archaeological signatures. This assertion will be further challenged in this volume.

In terms of risk mitigation, the loss of a vessel (structure), its cargo and/or lives aboard all represented the same type of scenario, the only difference being the nature and degree of severity of the loss. Therefore, in terms of shipwrecks versus strandings, the risk presented by the incident was in many respects the same. The objective of any risk mitigation strategy on the parts of mariners and coastal communities was to optimize the final result by minimizing the potential for the worst outcome (i.e. actual total loss). These types of vessel incidents also had tangible physical influences on the ways that mariners used the sea and ports (Duncan 2000). Consequently, any study of the effects of shipwrecks on a community should also consider all types of shipping incident that occur in that region.

## *Salvage*

One of the major cultural processes in response to shipping mishaps is of course salvage. Maritime archaeology is still lacking in general studies of either the physical or social processes behind these activities, although Richards’ (2008) “*Ships’ Graveyards*” and Stammers’ (2004) “*The End of Voyages*” are both important investigations which trace the trajectories of vessels beyond their wreck or decommissioning, into reuse, placement or destruction. There is also interest in the biography of objects salvaged from shipping mishap sites, including their symbolic significance and how these items move through communities (e.g. Steinberg 2008; Hosty 2010; Cook and Tolia-Kelly 2010; Gregson et al. 2011). However, there has been very limited consideration of the social processes involved in the transformation of ships into “places” (Simpson 1999; Gibbs 2005). Elsewhere, we have provided a detailed overview of some of the main definitions and process considerations behind the salvage of vessels (Gibbs and Duncan 2015), some of which will be discussed in more detail within this volume.

To simplify discussion of cultural processes including salvage which extract, scramble or add material associated with a shipping mishap site, we have previously used a simple hierarchy of a ship’s structure and contents (see Table 2.3). This is based in broad terms on the relative difficulty of removing materials and how they

**Table 2.3** Categories of material comprising a ship (Gibbs 2006: 3)

Category	Materials
Cargo and contents	Non-fixed items not associated with the mechanical operation of the ship and which were meant to be removable, including the ship's boats and life rafts
Fixtures and fittings	Minor fixed items, fittings, yards, chains, ropes, anchors and cannon, minor mechanical items and equipment
Minor structural	Items not normally removed, but whose removal would not compromise the integrity of the hull, such as bulkheads, decks, masts, superstructure, major mechanical items and equipment
Major structural	Elements of the ship whose removal would affect the integrity of the vessel, including hull planking, ribs and other structural items

relate to the structural integrity of the vessel (Table 2.3). These categories are flexible and not strictly hierarchical, as a large or heavy cargo item, or one situated in the lower hold of the ship, might be substantially more difficult to access and remove than lighter fittings or structural elements situated elsewhere (Gibbs 2006: 4). These distinctions are also useful for tracing the movement of materials within and beyond the community.

We suggest that most of the processes of salvage can also be aligned with the general model of the progression of a shipping mishap discussed above and broadly divided into a series of categories (Table 2.4) (Gibbs 2006). *Systematic salvage* might occur in one or several phases over time, depending on changing perceptions of value, or access to new or improved technologies. *Opportunistic salvage* could also occur sporadically and repeatedly over a longer period, presumably after the more formal systematic salvage processes were completed, although either one might precede the other or the two forms of salvage could even occur successively

**Table 2.4** Stages of shipping mishap

Stage	Examples of actions
Pre-impact (threat)	Selection or technological development of appropriate vessels, selection of route, training of crew, stowage of materials, lookouts
Pre-impact (warning)	Jettison or removal of materials to attempt to avert disaster (i.e. prior to impact)
Crisis salvage	Removal of materials to attempt to save the vessel or to facilitate immediate survival
Survivor salvage	Removal of materials to assist survival away from the wreck if no rescue or assistance is immediately available. Often of a limited nature due to restricted resources
Systematic salvage	Usually, professional salvors with time, workforce and technology to undertake an intensive and sustained effort to remove all or some of the cargo, fittings, minor and major structural elements, including potentially refloating and removal of the vessel
Opportunistic salvage	Non-systematic removal of structure and contents, possibly illegal. Focus on accessible cargo, contents, fixtures, fittings, and minor structural elements. In some circumstances could extensively strip a derelict and contents

in a cyclic manner. These distinctions are explained further below and can also be applied to off-site materials (flotsam, jetsam and lagan, see Table 2.2), as considerable quantities of material could float away from a wreck (including as a result of the associated salvage operation).

As will be described below, wreck materials washing ashore near coastal communities, some with their own formal and informal (i.e. traditional) codes and practices for accessing this sort of material, could mean that protection was required until the legal owners or agents could organize (systematic) salvage. Both systematic and opportunistic salvage of shipwrecks and materials from shipping mishaps are evident throughout the history of the Queenscliffe community, and the interplay between these practices is a significant element in the following chapters.

Beyond the need to rescue human life, the effort expended in saving a vessel from impending catastrophe and the extent of post-mishap salvage was determined by many interrelated factors. Salvage priorities, processes and techniques were balanced against considerations of hazards, risk mitigation and the expense of the recovery operation against the potential economic profits (including practical reuse), social rewards, strategic requirements or symbolic benefits in recovering material (Gibbs 2006: 14). Some of the factors influencing decisions on whether and how to salvage, especially for systematic salvage, are included in Table 2.5.

**Table 2.5** Factors influencing type and intensity of salvage

Size, type, construction and purpose of the vessel
Type (size, composition) of cargo being carried
Perceived values of different components, which also prioritized the order and intensity of removal (e.g. salvaging the vessel's structure in whole or part versus cargo and contents)
Setting, environmental circumstances (weather, currents) and accessibility (grounded or submerged)
Current structural integrity of the vessel and potential speed of or nature of changes
Logistical constraints (e.g. proximity to shore, distance from settlements and/or transport networks and suitable places for salvage camps/storage)
Technologies and labour force(s) available locally and regionally, including specialist knowledge and experience
Cultural dangers (e.g. war, Indigenous attack, contested ownership)
Legal or traditional ownership
Processes and procedures stipulated by legal, insurance, corporate, institutional or other policies, codes and guidelines
Other cultural factors (e.g. the circumstances of the wrecking event, or social or symbolic significance encouraging or discouraging removal of material). These might include the inhibitions or superstitions related to salvaging from a wreck where deaths have occurred
Time since the original wreck event and the progress of these various factors, including changing environmental, structural, access or cultural conditions

These and other considerations dictated priorities in what to take, the order in which it was taken (and to what extent), and conversely what to leave behind. Decisions not to salvage, perform only limited salvage, or abandon a wreck site temporarily or permanently presumably came when the structural remains or the materials within and around fell below a predetermined threshold of value. A vessel or site might, however, be subjected to successive periods of salvage depending on whether for instance the economic, social or symbolic values of the wreck shifted, salvage technologies or labour force improved, or if environmental circumstances and conditions increased or decreased access, hazard or effort. Different groups would perceive different values and potentials over time, both towards the core mishap site(s), but also towards flotsam, jetsam or even previously removed items. Cycles of systematic salvage might be interspersed with numerous episodes from opportunistic salvors, potentially operating with very different intentions and perception of the resources which shipping mishap sites offered. These cycles could extend over generations and take on aspects of traditional attachment and practice within a greater cultural landscape(s). Discussion of many of these factors and associated concepts relevant to the nature of shipping mishaps and the formation and continuity of maritime cultural landscapes are woven into the fabric of the following chapters.

## **Methodological Approaches to Maritime Cultural Landscape Studies**

Duncan (2006, 2011) has previously outlined the scope of traditional data sources which might be utilized to explore and analyse maritime cultural landscapes, some of which are already well understood. These include the following: archaeological sites, documentary (historical and cartographic) records and anthropological (ethnography, folklore, oral historical) observations. Although the remains of archaeological sites give physical clues about practical aspects of societies, they do not necessarily inform of the ideologies that created them, and preservation factors may present a distorted view of past lifeways. This discussion also recognizes the heavy reliance on historic documentary and anthropological records in historical and maritime archaeological investigations and the necessity of further critical review of their veracity and validity, especially when using documentary sources that present selective observer interpretations which may not reflect reality (e.g. South 1977; Deagan 1988; Seashole 1988: 92–93; Wood 1990; Dark 1995: 42–47; Orser and Fagan 1995; Keates 1996; Whiteley 2002: 408; Pipkin 2003).

Indigenous Australian and Pacific island communities encode and contain their ancestral cultural identity within their cultural landscape(s) and associated features, especially through the identification and naming of places and the retelling of tales associated with them. The history and beliefs of each culture were *read* by the physical act of moving through the landscape and by constantly recounting folklore

stories (through oral history) of past ancestors and events, whose memory is triggered by named places (toponymy). The physical act of moving through the landscape while recounting community/familial history therefore reinforces one's own ties to it. Community members demonstrate this sense of belonging (to their given culture) by their ability to narrate this restricted knowledge. Thus, local toponymy, oral histories and folklore are inextricably linked to understanding and reinforcing cultural landscapes, acting as mechanisms to explain and understand both physical and intangible sites (Hviding 1996; Roe 2000, 2002).

Although these data sets are essential components in most studies of maritime Indigenous cultures worldwide, at the time the research this book is based on was undertaken, they had not been widely explored in the maritime context. These sources offer glimpses of more personal perspectives and often previously undocumented aspects of daily life and community values. As key drivers in cultural landscape formation, each will be briefly addressed to examine their potential to further elucidate landscape aspects from a cognitive perspective.

Several researchers have succinctly demonstrated the utility of ethnographic and anthropological studies of analogous cultures for understanding how cultural practices are archaeologically expressed (e.g. Gould 1980; Gould and Yellen 1987; Binford 1988). Although archaeological, documentary and anthropological records are parallel data sets, they also act as independent sources and thus corroborate or challenge each other to provide a holistic and diversified notion of past cultural traits. This study adopted an ethno-archaeological approach, whereby the practical and cognitive nature of activities associated with individual cultural practices were explored (using the above data sets) and then compared against their subsequent archaeological signatures using overlaid layers in a GIS. This approach linked observed behaviour to archaeological sites, thereby enabling new understandings of the site formation processes and behavioural practices that have produced archaeological places (and vice versa).

This GIS-based methodological approach facilitated the superimposition of observations of different thematic types of practices with associated material culture and perceptive values, and contrasted these with the archaeological record in those areas. Ethno-archaeological observations often provided significant insights into previously unrecognized cultural practices and their corresponding archaeological signatures, a process which also worked in reverse where the nature of archaeological sites hinted at undocumented cultural practices. The mapping of cognitive perceptions associated with identified significant sites was utilized to assign social meaning to relict landscapes, places and features.

### ***Documentary and Ethno-Historical Analysis***

Ethno-historical accounts of culture and material culture also represented another source of oral history and folklore, especially through contributions to local Queenscliffe newspapers. While the objectivity of local newspapers was often

questionable, the spirited and often highly opinionated rhetoric provides valuable insights into the psyche and rationale of many community members that is not available in official historical records. These views were contained in the local editorials and personal community contributions, which proved valuable for later analysis of local community structures and hierarchy.

Aside from explicit details of various activities (including accounts of social events, tourist attractions and infrastructure construction) undertaken in the area, the Queenscliffe newspapers often include explicit accounts of important local issues, folklore and scandals, sometimes presenting a startling contrast to mainstream documentary accounts. Of note is a series of individual memoirs and reminiscences of several maritime services and industries written by local identities, many of whom were residents in the 1850s. In addition to providing personal minutiae not evident elsewhere, these anecdotal accounts represent the first recorded oral histories and/or ethno-historical accounts of the township and extend the range of the subsequent oral history interview records (undertaken by Duncan and the Queenscliffe Historical Museum) for the area backwards by some 150 years.

### *Oral Histories and Folklore*

Oral histories are used by different social groups both to inform and reinforce their own cultural identity (Young 2002: 13–14). A number of researchers have recognized the inherent value of utilizing oral histories to elucidate the cultural/social aspects of community life (that are evident in folklore) and which might not otherwise be apparent in the historical or archaeological records (e.g. Yentsch 1988; Paynter 2002; Young 2002). Paynter (2002: S92–S93) has stressed the importance of narrative for investigating alternative histories that are normally overridden by the predominant and often dominant social systems that influence written historical texts.

Folklore represents an informal framework for communicating culturally significant information outside official societal structures, which is incorporated into group customary thought and practice and transmitted through oral and documentary local histories (Seal 1989: 7). It has played a substantial role in the shaping of the landscape in many maritime cultures (see Westerdahl 1980; Johannes 1992; Lewis 1994; Hviding 1996) where it directed usage of areas based on spiritual beliefs, superstition, tradition or caution associated with past cultural events, and often revealed underlying cultural realities that elucidated further aspects of (often) relict cultural landscapes. Many studies have demonstrated the validity of the integrated use of oral histories and folklore in archaeological and historical research (e.g. Gazin-Schwartz and Holtorf 1999: 11), and that each discipline's source could

not be adequately understood without reference to the other. It has also been argued that the shallow time depth of nineteenth-century narratives means that oral traditions are of sufficient accuracy to be accepted by archaeologists as historical documents (Symonds 1999).

Although many researchers have advised caution (e.g. Coll 1977: 17 as cited in Young 2002: 13; Souter 2003), oral histories provide an opportunity to access traditional folklore and practices that, when subjected to analysis and interpretation, can be seen as a valid data source for landscape studies (Gazin-Schwartz and Holtorf 1999: 17–19). Taken further, it could be said that when examining oral histories for cultural landscape studies, the accuracy of the account is irrelevant, as the substance of the narrative is of more importance as an indicator of personal landscape perspectives and ideologies. Therefore, it is recognized that multiple pasts will exist in regional oral histories, each with its own distinct qualities based on personal experience, a situation analogous with the underlying principles of cultural landscapes studies.

Finally, the concept of the maritime cultural landscape recognizes that the local knowledge held by community members can be the product of many generations of collective knowledge. In effect, the recollections of these people embody a palimpsest of cognitive cultural perceptions and traditions that form part of their own current personal landscapes. Parallels exist with Pacific and other Indigenous maritime societies where folklore and cultural traditions are used to reinforce the social identity and history within a community. Several studies of Indigenous maritime societies provided indications for the analogous types of specialist practical and nautical knowledge that might be found for maritime communities in the study area. These Indigenous studies included documentation of Pacific Island fishing communities (Iversen et al. 1990; Johannes 1992; Hviding 1996) and long distance voyaging (Gladwin 1970; Finney 1976; Turnbull 1991; Irwin 1992; Lewis 1994; Thomas 1997), all of which indicated that maritime communities would possess various levels of specialist knowledge regarding environmental and climatic conditions; resource availability, location and procurement methods; navigation; and ancestral history, which in some cases would only be evident via oral history traditions (see Duncan 2000, 2004).

Queenscliff and surrounding areas proved a fertile ground for oral histories and folklore, as many residents could trace their familial origins back to five generations, and in some cases in the same industry. Numerous long-term residents were interviewed who demonstrated affiliations (either direct or familial) with local maritime industries, services or other coastal activities. Most of the participants interviewed were between the ages of 70 and 90, which meant they often had first-hand memories of many of the events, themes and sites being investigated. Younger participants also included those who demonstrated a strong familial knowledge or direct ties to maritime industries that exposed them to the cognitive landscapes and collective knowledge of mariners in those services. Oral histories were also available through taped interviews held by local historical museums.



Many informants offered perspectives into multiple industries, which provided useful overlaps for comparing and contrasting data derived from other sources and interviews and for attaining different perspectives of individual places or features. Oral histories therefore were clearly an important method of transmission of local histories within the township and often evidenced information that was not available through other sources of historical documentation (Duncan 2011).

Each informant was initially interviewed with a set of standard predetermined questions, which were designed to identify places associated with various cultural practices, along with the specific nature and diversity of the activities undertaken there which would later aid in the identification of their possible archaeological signatures. Informants were also questioned regarding social relations in the township, their belief systems and superstitions, and intangible knowledge of the maritime environment and economic resources.

### *Toponymy*

Toponymy is a significant component of maritime cultural landscape studies (Holmberg 1991; Westerdahl 1980, 2002a, b, 2003a; Whiteley 2002: 411). People name places in ways that are significant to them, and the investigation of toponyms may provide insights into past cultural uses of an area (Barber 1994: 17). Events outlined in oral histories were often identified and encoded in place names that “materially objectify oral history in the tangible inspectable landscape” (Whiteley 2002: 410). Place names serve multiple purposes within a landscape. They may act as a reminder of cultural identity through the cognitive preservation of famous persons, events and history; operate as descriptive navigational signs; detail historical events; associate cultural activities to geographical features; or endeavour to promote the virtues of an area to potential users; and are at once both a perceptive and tangible reminder of the community’s past (Barber 1994: 18). Toponymy cross-cuts other data sources, as it draws from a wide range of fields, and therefore has the ability to extract past cultural regional usages, and as such represents another source of data that may assist in defining a landscape.

Special attention was given to the maritime toponymy of Queenscliffe, with an intensive analysis of historical and modern maps. Local historical memoirs often revealed the only evidence of the meaning of these place names through the recording or use of unofficial toponymy. The oral interview process similarly captured a range of informal place names (and their meanings) and also revealed that knowledge of many place names was often restricted to particular groups within the maritime community.

## ***Archaeological Data***

Divers, fishermen and other mariners play an important role in the discovery of underwater archaeological sites, due to their knowledge of the submerged landscape through direct engagement or finds in nets (Maarleveld 1997: 5; Westerdahl 1999: 100). Massagrande (1995) has shown that even randomly collected survey data (by non-professionals) can be utilized to examine regional patterning of sites, if the nature of the bias and selective acquisition of the collectors is recognized. These sources therefore offer potential independent archaeological data sets that may represent vast periods of personal experience, which far exceed the capacity of individual researchers to record alone, and may be derived from remote areas or regions never previously unexplored by archaeologists. They therefore represent significant alternative resources of archaeological data.

Archaeological data relevant to the maritime cultural landscape of the Queenscliffe area were garnered through systematic field surveys undertaken over along approximately 80 km of coastline and offshore islands, with a particular focus on the littoral zone and nearby underwater sites. Due to the enormous size of the study area, these surveys were supplemented with existing local knowledge of archaeological sites derived from interviews with local divers and other community members. The data proved to be predominantly accurate and reliable for most informants, as sites were almost always relocated during targeted surveys.

## ***Thematic Approaches and GIS Data Manipulation***

After reviewing examples of analogous international maritime communities, this study recognized that different groups will use the maritime environment in disparate ways, and accordingly, multiple maritime cultural landscapes will exist in any one area. A variety of maritime industries and services existed in the Queenscliffe area. Therefore, a thematic approach was adopted that examined multiple cultural landscapes and associated landscape features relevant to individual(s) and collective maritime groups within the community.

Previous traditional thematic archaeological studies have encountered problems where sites which are used by multiple users and groups have commonly been allocated relevance to one theme *only* because of practical structural limitations within the recording system. The range of potential landscape features and inter-linked landscapes in the study area proved to be immense and intricately inter-related. The use of themes became a key element for the examination of different landscapes in this study, as the thematic fields could be used within a GIS database to indicate an individual's association(s) with a specific group(s) and/or particular landscapes. A greater appreciation of GIS and the use of thematic landscapes are presented in Duncan (2006: 69).

GIS database coverages were created to map, manage and analyse landscape features and site localities within Queenscliffe produced from the various data sets. This enabled multiple layers of disparate data to be analysed concurrently. Individual landscape features (both tangible and intangible) were encoded with more than one associated thematic value (through the assignment of separate fields for individual maritime groups, informants or other data sources). This not only enabled easier analysis of site patterning and landscape features using different combinations of themes or data source sets, but also elucidated the multiplicity of values that might be attached to them by different maritime groups, thus providing significant insights into landscape practices and perceptions. This aspect also applied to individual landscape participants, who might have cross-cutting ties with multiple thematic groups. These facets highlighted and facilitated investigative access to the multivalent considerations of landscape(s) at and across various levels. This was of critical importance to this study, as many maritime landscape themes and sites overlapped, were interlinked, and were often valued by different maritime groups for highly diverse reasons. GIS was also used to geo-reference cartographic and bathymetric sources to plot the location of historical landscape features and toponymic places, and these sites were then ground-truthed to investigate whether potential archaeological remains were present (Duncan 2006: 69–72).

## **Conclusion**

The theoretical structures and methodological approaches described above are woven into our narrative of Queenscliffe's responses to wrecks provided in the following chapters. The following chapter introduces the study area of Queenscliffe and the emergence of maritime community in the region. In particular, the role of shipping mishaps in generating risk mitigation industries and how these strategies influenced the development and perceptions of maritime use of the region is explored in detail.



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