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## PREFACE

Dear readers,

All praise and greatest gratitude we pray to Allah SWT, despite the enormously tight agenda within the final period of the year, Berkala Arkeologi manage to publish this Vol. 1 No. 2 November 2021 edition on time. The implementation of PPKM (Enforcement of Restrictions on Community Activities) that leads to intense and restricted schedule and followed by the approval for all field research activities that involves editorial board personnel and a close schedule for this Scientific Journal publication has been successfully overcome. This November 2021 edition of the Berkala Arkeologi publishes seven articles from various archaeological studies. Two articles on prehistoric archaeology, two articles on Hindu-Buddhist archaeology, one on Islamic-Colonial archaeology, one on metallurgy and the environment, and one on underwater archaeology.

On the first article that discusses the prehistoric archaeology, especially stone tools entitled "*The function of stone tools from Gua Arca Site, Kangean Island, East Java*" was written by Muhammad Rafi. This paper discusses the discovery of stone tools at the Arca Cave Site from the preneolithic period engaged to the analysis of tool functions. Based on the type of tool and microscopic analysis of the use of stone tools as well as the experimental results of previous researchers, it is concluded that the function of the stone tools was correlated to woodworking and food processing activities.

The second article that discusses the prehistoric archaeology with the title "*Gender roles in the prehistoric fishing community: A case study from Gilimanuk Site, Bali*" was written by Dicky Caesario Wibowo. This article discussed the construction of gender roles in a community activity associated with one particular gender. Based on pathological data, it was proved that physical activity was able to meet daily needs, there were no specific activities executed by one gender only. These results indicated the lack of evidence for certain gender roles in prehistoric times at the Gilimanuk Site.

The next two following articles were about on Hindu-Buddhist archaeology. First, the article entitled "*Iconography analysis of flower and animal ornaments on the prabhamandala of Shiva statue of the National Museum Indonesia*" was written by Ashar Murdihastomo. The discussion in this article mainly emphasizes the religious aspect. Based on the religious concept that developed during the production of the Shiva statue, it showed that the lotus and goose (*hamsa*) ornament on the Shiva statue was a representation of the religious rites of the *Siva Siddhanta* around the XIII-XIV centuries AD in eastern part of Java.

The second Hindu-Buddhist archaeological article, entitled: "*Iconography analysis of ornaments present under yoni spout at Watu Genuk Site, Kragilan, Mojosongo, Boyolali*" was written by Muhammad Faiz. The *yonis* at Watu Genuk Site has decorations at the bottom of the spout in the form of anthropomorphic beaks, turtles, and snakes. The interpretation of this *yonis* ornaments in iconographic analysis and comparison of *yonis* ornaments showed that the decoration under the *yonis* spout at the Watu Genuk Site were not merely decorative. It had also another meaning which was a representation of Hindu mythology contained in *diparwa* texts such as *Samudramanthana* and *Garudeya*.

Next, an article on Colonial-Islamic archaeology entitled: "*Political approach of Sultan Abu Al-Mahasin and Sultan Mahmud Badaruddin II towards the Lampungnese in XVII and XIX century CE*" was written by Muhamad Alnoza. This paper discusses specifically the power relations between the Sultan of Palembang (Sultan Mahmud Badaruddin II) and the Sultan of Banten (Sultan Abu Al-Mahasin) in the Lampung region based on *Piyagem Natayuda* and *Dalung Bojong*. The discussion focuses on the form of political messages done by Sultan Mahmud Badaruddin II and Sultan Abu Al-Mahasin in relation to the approach taken by the two sultanates to the people of Lampung. In line with series of studies on the inscription data, it is clearly seen that the Sultanate of Palembang was more focused on a *hard power* approach, while the Sultanate of Banten was more to the combination of *hard power* and *soft power*.

The following article entitled "*Iron industry and Banjar War on the upper of the Barito Watershed, North Barito, Central Kalimantan*" which was co-written by Hartatik, Sunarningsih, Nugroho Nur Susanto, Gaury V. Daneswara, and Dian Triasri. This article discusses the outcomes of archaeological research in the upper Barito watershed on 19 iron-ore smelting sites (*buren*, in the local language). Based on radiocarbon dating, it is known that *buren* was used from the 16th to the 19th century AD. The results showed a correlation between the peak of the iron industry in the 19th century AD and the events of the Banjar

peak of the iron industry in the 19<sup>th</sup> century AD and the events of the Banjar war in the upper Barito River. Through a historical archaeological approach, it is identified that the types of weapons used in the Banjar war have similarities with the inherited weapons belonging to the people of upstream Barito. In addition to this, the location of the *buren* has shifted from the banks of the main river to the banks of the tributaries.

The last article entitled "*Alternative model for sustainable utilization of underwater cultural heritage in Indonesia*" was co-written by Alqiz Lukman, Panji Syofiadisna, Shinatria Adhityatama, Harriyadi, Dewangga Eka Mahardian, and Erni Trisnawati. Indonesia holds several underwater cultural heritages that have the potential to increase the pride of the nation's identity and encourage the socio-economic condition of the people. However, at present the use of underwater cultural heritage plays only for the purpose of economic commodities trading and contribute only little attention to the preservation and protection of these objects. Minimum supervision and overlapping regulations are assumed to be the main problems in the preservation of underwater cultural heritage in Indonesia. This paper aims to find alternative usages of underwater cultural heritage in Indonesia.

These are the seven articles published in *Berkala Arkeologi* Vol. 41 No. 2 November 2021 edition. We certainly hope that these articles will add insight and provide a wider knowledge for the readers. In addition, we hope that the types of articles published in this journal will be more various in the following edition. Finally, suggestions and positive inputs for the improvement of this *Berkala Arkeologi* journal are highly expected.

Regards,  
Berkala Arkeologi Editorial Board

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<p><b>DDC 930.1</b> The function of stone tools from Gua Arca Site, Kangean Island, East Java</p> <p>Rahfi Muhammad (Department of Archeology, Faculty of Cultural Sciences, University of Indonesia)</p> <p><i>J. Berkala Arkeologi November 2021, vol 41 no.2, 159-176</i> Gua Arca is a prehistoric cave site in Kangean Island, East Java. Stone tools found in this site has yet to be studied in terms of the function, merely being collected instead. This article discusses the possible function of the stone tools based on typological and microscopical use-wear analysis, compared to the results from previous experimental research. The results of the analysis show that use-wear is related to the tools' function and the material they worked on. The similarity between use-wear traces on stone tools from Gua Arca and the result from previous experimental research indicates the stone tools' function as wood-working tools and food-processing tools.</p> <p>(Author)</p> <p><b>Keywords:</b> Gua Arca; stone tool; use-wear; function</p>	<p><b>DDC 959.801</b> Iconography analysis of ornaments present under <i>yoni</i> spout at Watu Genuk, Kragilan, Mojosongo, Boyolali</p> <p>Muhammad Faiz (Alumni of the Department of Archaeology, Faculty of Cultural Sciences, Universitas Gadjah Mada)</p> <p><i>J. Berkala Arkeologi November 2021, vol 41 no.2, 215-232</i> Yoni at the Watu Genuk Site, Kragilan, Mojosongo, Boyolali is one of the many Hindu-Buddhist remains of the Ancient Java period found in Central Java. The yoni has ornaments located under the water spout in the form of anthropomorphic beaked figure, turtle, and snakes. This article discusses the meaning of <i>yoni</i> ornaments at the Watu Genuk Site through iconographic and comparative analysis with similar figures. The analysis results show that ornaments under the <i>yoni</i> water spout at the Watu Genuk Site is not only decorative, but also has meaning of representing Hindu mythology in <i>Adiparwa</i> manuscripts such as <i>Samudramanthana</i> and <i>Garudeya</i>.</p> <p>(Author)</p> <p><b>Keywords:</b> Ancient Java; <i>yoni</i>; Hindu; iconography; Boyolali.</p>
<p><b>DDC 930.13</b> Gender roles in the prehistoric fishing community: A case study from Gilimanuk Site, Bali</p> <p>Dicky Caesario Wibowo (Forensic Science Master Program, Postgraduate school, Universitas Airlangga)</p> <p><i>J. Berkala Arkeologi November 2021, vol 41 no.2, 177-194</i> Gender roles are defined as social construction of activities and statuses associated to specific genders in a society. This article aims to investigate gender roles among prehistoric community in Gilimanuk Sites based on the division of labor by sex. This research uses bioarchaeological approach by comparing enthesal changes on 42 male and female individuals. The result shows there is no specific activity associated to certain sex in daily subsistence. This indicates the gender construction in the prehistoric fishing community in Gilimanuk Sites.</p> <p>(Author)</p> <p><b>Keywords:</b> Bioarchaeology; gender roles; enthesal changes; fishing community; prehistory; Gilimanuk Site.</p>	<p><b>DDC 959.801</b> Political approach of Sultan Abu Al-Mahasin and Sultan Mahmud Badaruddin II towards Lampungnese society in XVII and XIX AD</p> <p>Muhamad Alnoza (Graduate Program of Cultural Anthropology, Faculty of Cultural Science, Universitas Gadjah Mada)</p> <p><i>J. Berkala Arkeologi November 2021, vol 41 no.2, 233-250</i> This study specifically aims to examine the power relations of the Sultan of Palembang (Sultan Mahmud Badaruddin II) in XIX century CE and the Sultan of Banten (Sultan Abu Al-Mahasin) in XVII century CE Lampung region based on <i>piyagêm</i> Natayuda and <i>dalong</i> Bojong inscriptions. This study describes the form of political messages of Sultan Mahmud Badaruddin II and Sultan Abu Al-Mahasin in relation to the approach taken by the two kingdoms to the people of Lampung. Based on the analysis results of the inscriptions, it can be seen that the Sultanate of Palembang was more oriented towards a hard power approach, while the Sultanate of Banten was oriented to a combination of hard power and soft power</p> <p>(Author)</p> <p><b>Keywords:</b> Banten; <i>dalong</i>; Lampung; Palembang; <i>piyagêm</i>; inscriptions</p>
<p><b>DDC 959.801</b> Iconography analysis of flower and animal ornaments on the <i>prabhamandala</i> of Shiva statue of the National Museum of Indonesia</p> <p>Ashar Murdihastomo The National Research Center of Archaeology</p> <p><i>J. Berkala Arkeologi November 2021, vol 41 no.2, 195-214</i> Shiva is one-third of the highest Gods in Hindu religion, who together with Brahma and Vishnu form Trimurti. The worship of Shiva is embodied in the form of <i>lingga</i> or a statue, decorated with distinctive ornaments and attributes commonly depicted to identify Shiva. A statue with inventory number 29a/3184 in the National Museum Indonesia depicts Siwa with flower and animal ornament which have never been found in other Shiva statues. This article aims to investigate the religious concept flourished during the making of this statue by conducting an iconographic analysis on the said ornaments. Through a descriptive-explanatory approach, the author suggests that the Indian lotus (<i>padma</i>) and goose (<i>hamsa</i>) ornaments are the representation of Shaiva Siddhanta rite practiced during XIII-XIV century CE in the eastern Java.</p> <p>(Author)</p> <p><b>Keywords:</b> National Museum of Indonesia; Mahadeva; Shaiva Siddhanta; <i>padma</i>; <i>hamsa</i></p>	<p><b>DDC 959.802</b> Iron industry and Banjar War on the Upper Barito Watershed, North Barito, Central Kalimantan</p> <p>Hartatik, Sunarningsih, Nugroho Nur Susanto (Regional Agency for Archaeological Research in South Kalimantan Province), Gaury V. Daneswara (Department of Culture and Tourism in Central Kalimantan Province), and Dian Triasri (Regional Agency for Archaeological Research in South Kalimantan Province)</p> <p><i>J. Berkala Arkeologi May 2021, vol 41 no.2, 233-250</i> Archaeological research on iron industry in the upper Barito river basin in 2017-2019, show 19 iron ore smelting sites called <i>buren</i> in the local language. Based on radiocarbon dating, the <i>buren</i> was used from 16th to 19th CE. This paper aims to explain correlation between the peak of iron industry in 19th CE and the Banjar War in the upper Barito river, based on a comparison of chronology, type of weapons, and location of <i>buren</i>. Through the historical-archeology approach, the authors suggest that the types of weapons used in the Banjar War have similarities with the inherited weapons of upper Barito people. Several known <i>buren</i> locations also recorded in historical data of the Banjar War. The location of <i>buren</i> shifted from the banks of main river to the banks of tributary river.</p> <p>(Author)</p> <p><b>Keywords:</b> Upper Barito; Banjar War; iron industry; weapon; <i>buren</i></p>

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## DDC 930.102

Alternative models for sustainable utilization of underwater cultural heritage in Indonesia

Alqiz Lukman, Panji Syofiadisna (The National Research Center of Archaeology), Shinatria Adhityatama (The National Research Center of Archaeology and Griffith Center for Social and Cultural Research, Griffith University), Harriyadi, Dewangga Eka Mahardian, and Erni Trisnawati (The National Research Center of Archaeology)

*J. Berkala Arkeologi* May 2021, vol 41 no.2, 251-270

Indonesia's abundant underwater cultural heritage is potential resource for the pride of national identity, as well as the socio-economic growth. However, current utilization of such resource is still merely limited to exploitable commodities with no consideration to its sustainability. This article aims to identify problems in the regulatory aspect of the utilization of underwater cultural heritage in Indonesia and to propose an alternative utilization model to respond the identified problems. Data collection for this study includes structured interview and literature study. Interviewees are selected people from The Ministry of Education, Culture, Research, and Technology, The Ministry of Marine Affairs and Fisheries, and Association of Indonesian Archaeologist. The results of qualitative analysis on the interview show overlapping implementation of four regulations regarding underwater cultural heritage. This article proposes a utilization concept adopted from the ecosystem restoration concession model as an alternative for sustainable utilization of underwater cultural heritage.

(Author)

**Keywords:** Underwater cultural heritage; utilization of Cultural Preservation; BMKT; ecosystem restoration; underwater archaeology



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Kata kunci yang dicantumkan adalah istilah bebas.  
Lembar abstrak inibolehdigandakan tanpa izin dan biaya.

<p><b>DDC 930.1</b> Fungsi alat batu dari Situs Gua Arca, Pulau Kangean, Jawa Timur</p> <p>Rahfi Muhammad (Alumnus Departemen Arkeologi, Fakultas Ilmu Pengetahuan Budaya, Universitas Indonesia)</p> <p><i>J. Berkala Arkeologi November 2021</i>, vol 41 no.2, 137-158</p> <p>Gua Arca yang terletak di Pulau Kangean, Jawa Timur, merupakan situs gua prasejarah. Sejauh ini, penelitian tentang alat batu dari Situs Gua Arca masih pada tahap pengumpulan data, sedangkan fungsinya belum diketahui. Artikel ini membahas kemungkinan fungsi alat batu dari Gua Arca, berdasarkan hasil analisis tipe alat dan analisis mikroskopis jejak pakai yang dibandingkan dengan hasil penelitian eksperimental sebelumnya. Hasil analisis menjelaskan keterkaitan antara jejak pakai dengan penggunaan alat dan material yang dikerjakan. Kemiripan antara jejak pakai pada alat batu Situs Gua Arca dengan hasil eksperimen terdahulu menunjukkan kemungkinan fungsi sebagai alat pengerjaan kayu dan pengolahan bahan makanan.</p> <p>(Penulis)</p> <p><b>Kata kunci:</b> Gua Arca; stone tool; use-wear; function</p>	<p><b>DDC 959.801</b> Analisis ikonografi ragam hias di bawah cerat yoni di Situs Watu Genuk, Kragilan, Mojosongo, Boyolali</p> <p>Muhammad Faiz (Alumnus Departemen Arkeologi, Fakultas Ilmu Budaya, Universitas Gadjah mada)</p> <p><i>J. Berkala Arkeologi November 2021</i>, vol 41 no.2, 195-214</p> <p>Yoni di Situs Watu Genuk, Kragilan, Mojosongo, Boyolali merupakan salah satu dari sekian banyak peninggalan masa Jawa Kuno bercorak Hindu-Buddha yang ada di Jawa Tengah. Yoni tersebut memiliki ragam hias di bagian bawah cerat berupa figur antropomorfik berparuh, kura-kura, dan ular. Artikel ini membahas makna dari ragam hias yoni di Situs Watu Genuk melalui analisis ikonografi dan perbandingan ragam hias yoni dengan figur yang serupa. Hasil analisis menunjukkan bahwa ragam hias di bawah cerat yoni di Situs Watu Genuk tidak hanya bersifat dekoratif, namun juga memiliki makna representasi mitologi Hindu yang tercantum dalam naskah <i>Adiparwa</i> seperti <i>Samudramanthana</i> dan <i>Garudeya</i>.</p> <p>(Penulis)</p> <p><b>Kata Kunci:</b> Jawa Kuno; yoni; Hindu; ikonografi; Boyolali</p>
<p><b>DDC 930.13</b> Peran gender di komunitas nelayan prasejarah: Studi kasus dari Situs Gilimanuk, Bali</p> <p>Dicky Caesario Wibowo (Program Magister Ilmu Forensik, Sekolah Pascasarjana, Universitas Airlangga)</p> <p><i>J. Berkala Arkeologi November 2021</i>, vol 41 no.2, 159-176</p> <p>Peran gender adalah konstruksi sosial ketika aktivitas dan status dalam masyarakat dikaitkan dengan satu jenis kelamin tertentu. Artikel ini bertujuan memahami peran gender pada masa prasejarah akhir di Situs Gilimanuk berdasarkan pembagian kerja sesuai jenis kelamin. Penelitian ini menggunakan pendekatan bioarkeologi dengan membandingkan jejak entesis pada perlekatan tulang panjang dari 42 individu laki-laki dan perempuan. Hasil penelitian menunjukkan tidak ada aktivitas fisik yang spesifik dilakukan oleh satu jenis kelamin saja dalam pemenuhan kebutuhan sehari-hari. Hal ini menunjukkan konstruksi gender pada masyarakat nelayan prasejarah di Situs Gilimanuk.</p> <p>(Penulis)</p> <p><b>Kata kunci:</b> Bioarkeologi; peran gender; perubahan entesis, komunitas nelayan; prasejarah; situs Gilimanuk</p>	<p><b>DDC 959.801</b> Pendekatan politik Sultan Abu Al-Mahasin dan Sultan Mahmud Badaruddin II di Lampung abad XVII dan XIX M</p> <p>Muhamad Alnoza (Program Pascasarjana Antropologi Budaya, Fakultas Ilmu Budaya, Universitas Gadjah Mada)</p> <p><i>J. Berkala Arkeologi November 2021</i>, vol 41 no.2, 215-232</p> <p>Kajian ini secara khusus bertujuan mengkaji relasi kuasa Sultan Palembang (Sultan Mahmud Badaruddin II) pada abad XIX dan Sultan Banten (Sultan Abu Al-Mahasin) pada abad XVII di wilayah Lampung berdasarkan <i>piyagêm</i> Natayuda dan <i>dalung</i> Bojong. Kajian ini membahas tentang bentuk pesan-pesan politis Sultan Mahmud Badaruddin II dan Sultan Abu Al-Mahasin dalam kaitannya dengan pendekatan yang dilakukan oleh kedua kesultanan tersebut kepada masyarakat Lampung. Berdasarkan hasil analisis data prasasti, dapat diketahui bahwa Kesultanan Palembang lebih berorientasi pada pendekatan yang bersifat <i>hard power</i>, sedangkan Kesultanan Banten berorientasi kepada perpaduan antara <i>hard power</i> dan <i>soft power</i>.</p> <p>(Penulis)</p> <p><b>Kata Kunci:</b> Banten; <i>dalung</i>; Lampung; Palembang; <i>piyagêm</i>; prasasti</p>
<p><b>DDC 959.801</b> Analisis ikonografi ornamen bunga dan binatang pada prahamandala arca Siwa koleksi Museum Nasional Indonesia</p> <p>Ashar Murdihastomo (Pusat Penelitian Arkeologi Nasional)</p> <p><i>J. Berkala Arkeologi November 2021</i>, vol 41 no.2, 177-194</p> <p>Siwa adalah salah satu dewa tertinggi dalam agama Hindu, yang bersama Brahma dan Wisna membentuk kesatuan Trimurti. Pemujaan terhadap Dewa Siwa diwujudkan dalam bentuk lingga dan arca tokoh, yang dilengkapi dengan ornamen dan atribut khas yang mencirikan identitas Siwa. Arca dengan nomor inventaris 29a/3184 di Museum Nasional Indonesia menggambarkan Siwa dengan ornamen bunga dan binatang yang belum pernah digambarkan pada arca Siwa lainnya. Tulisan ini bertujuan untuk mengetahui konsep religi yang berkembang pada masa pembuatan arca Siwa tersebut dengan melakukan analisis ikonografi terhadap penggambaran ornamen tersebut. Melalui pendekatan deskriptif-eksplanatif, diketahui bahwa ornamen padma dan angsa (hamsa) pada arca Siwa tersebut merupakan representasi aktivitas ritus keagamaan aliran Siwa Siddhanta pada sekitar abad XIII-XIV Masehi di Jawa bagian timur</p> <p>(Penulis)</p> <p><b>Kata Kunci:</b> Museum Nasional Indonesia; Mahadewa; Siwa siddhanta; padma; hamsa</p>	<p><b>DDC 959.802</b> Industri besi dan Perang Banjar di hulu DAS Barito, Barito Utara, Kalimantan Tengah</p> <p>Hartatik, Sunarningsih, Nugroho Nur Susanto (Balai Arkeologi Provinsi Kalimantan Selatan), Gaury V. Daneswara (Dinas Kebudayaan dan Pariwisata Provinsi Kalimantan Tengah) dan Dian Triasri (Balai Arkeologi Provinsi Kalimantan Selatan)</p> <p><i>J. Berkala Arkeologi November 2021</i>, vol 41 no.2, 233-250</p> <p>Penelitian arkeologi di hulu DAS Barito pada tahun 2017-2019 menghasilkan 19 situs peleburan bijih besi yang disebut <i>buren</i> dalam bahasa lokal. Berdasarkan pertanggalan radiokarbon diketahui bahwa situs <i>buren</i> digunakan dari abad ke-16 hingga abad ke-19 M. Tulisan ini bertujuan untuk mengetahui korelasi antara puncak industri besi pada abad ke-19 M dengan peristiwa Perang Banjar di hulu Sungai Barito, berdasarkan perbandingan kronologi, jenis senjata yang digunakan, dan pemilihan lokasi <i>buren</i>. Melalui pendekatan arkeologi kesejarahan, diketahui bahwa jenis senjata yang digunakan dalam Perang Banjar mempunyai kesamaan dengan senjata warisan milik penduduk hulu Barito. Diketahui pula bahwa sejumlah situs <i>buren</i> berada di lokasi yang disebutkan dalam sumber sejarah Perang Banjar. Lokasi <i>buren</i> tersebut bergeser dari tepi aliran sungai utama ke tepi aliran anak-anak sungai.</p> <p>(Penulis)</p> <p><b>Kata Kunci:</b> Hulu Barito; Perang Banjar; industri besi; senjata <i>buren</i></p>

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## DDC 930.102

Alternatif model pemanfaatan berkelanjutan tinggalan budaya bawah air di Indonesia

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Indonesia memiliki banyak tinggalan budaya bawah air yang berpotensi meningkatkan kebanggaan identitas bangsa dan mendorong kemajuan sosial ekonomi masyarakat. Akan tetapi, saat ini pemanfaatan tinggalan budaya bawah air sebatas pada komoditas ekonomi yang diperjualbelikan tanpa memperhatikan keselamatan dan kelestariannya. Tulisan ini bertujuan untuk mengidentifikasi permasalahan dalam aspek regulasi pemanfaatan tinggalan budaya bawah air dan menyajikan model pemanfaatan alternatif sebagai respon terhadap permasalahan tersebut. Pengumpulan data dilakukan dengan melakukan studi pustaka dan wawancara terstruktur terhadap narasumber yang mewakili Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi, Kementerian Kelautan dan Perikanan, serta Perkumpulan Ahli Arkeologi Indonesia. Analisis kualitatif terhadap hasil wawancara menunjukkan adanya tumpang tindih implementasi empat regulasi terkait pemanfaatan tinggalan budaya bawah air. Tulisan ini juga menawarkan konsep yang diadopsi dari model konsesi Restorasi Ekosistem sebagai model pemanfaatan tinggalan budaya bawah air yang berkelanjutan.

(Penulis)

**Kata kunci:** Tinggalan budaya bawah air; pemanfaatan Cagar Budaya; BMKT; restorasi ekosistem; arkeologi bawah air.