

Newyddion

CHERISH

News



CHERISH

Newid Hinsawdd a Threftadaeth yr Arfordir
Climate Change and Coastal Heritage
Athrú Aeráide agus Oidhreachd Chultúrtha

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*Clawr Blaen: Mentro i'r Dŵr. Deifwyr o MSDS Marine yn cychwyn i ymchwilio i longddrylliad y Bronze Bell.
Front Cover: Taking the Plunge. Divers from MSDS marine off to investigate the Bronze Bell shipwreck.*

Rob o'r Rhaglen Ddarganfod yn gwneud y gorau o'r tywydd braf ym mis Medi 2021 i gynnal arolwg UAV o Gaer Rosslare yn aber Harbwr Wexford.

Rob from the Discovery Programme making the most of the fine weather in September 2021 to undertake a UAV survey of Rosslare Fort at the mouth of Wexford Harbour.

CROESO

i Rifyn 9 Newyddion CHERISH

Croeso i nawfed rhifyn cylchlythyr CHERISH. Rydym wedi bod allan hyd y lle ac mae gennym ni lawer o newyddion i'w rannu gyda chi. Mae'r rhifyn hwn yn cynnwys uchafbwyntiau'r prosiect rhwng misoedd Gorffennaf a Rhagfyr, gan gynnwys ein cloddio cymunedol yng Nghaer Bentir Caerfai yn Sir Benfro a'n deifio cyntaf at longddrylliad, at y Bronze Bell oddi ar arfordir Cymru. Yn ôl dan do roedden ni hefyd yn brysur yn paratoi ar gyfer COP26 a chael arddangosfa deithiol CHERISH yn ôl ar y ffordd gyda lansiadau mewn 2 leoliad newydd. Mae trysorau wedi'u darganfod ac mae'r gwaith ditectif yn parhau...

I gael newyddion a straeon arbennig o ddydd i ddydd, cofiwch edrych ar wefan CHERISH a'n cyfrifon ni ar Facebook, Twitter, Instagram ac YouTube.

WELCOME

to Issue 9 of CHERISH News

Welcome to the ninth issue of the CHERISH newsletter. We've been out and about and have lots of news to share with you. This issue features the project highlights between July and December, including our community excavation at Caerfai Promontory Fort in Pembrokeshire and our first wreck dive, on the Bronze Bell off the Welsh coast. Back indoors we were also busy preparing for COP26 and getting the CHERISH travelling exhibition back on the road with launches at 2 new venues. Treasures have been uncovered and the detective work continues.....

For day-to-day news and features, don't forget to check out the CHERISH website and our Facebook, Twitter, Instagram and YouTube accounts.



www.cherishproject.eu



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Mae CHERISH yn brosiect chwe blynedd rhwng Iwerddon a Chymru ac mae'n dod â phedwar partner ar draws y ddwy wlad at ei gilydd: Comisiwn Brenhinol Henebion Cymru; y Rhaglen Darganfod, Iwerddon; Prifysgol Aberystwyth; Adran Daearyddiaeth a Gwyddorau Daear; ac Arolwg Daearegol Iwerddon. Dechreuodd y prosiect ym mis Ionawr 2017 a bydd yn weithredol tan fis Mehefin 2023. Bydd yn elwa o €4.9 miliwn o arian yr UE drwy Raglen Gydweithredol Iwerddon Cymru 2014–2020.

CHERISH is a six-year Ireland-Wales project, bringing together four partners across two nations: the Royal Commission on the Ancient and Historical Monuments of Wales; the Discovery Programme, Ireland; Aberystwyth

Mae CHERISH yn brosiect gwirioneddol drawsddisgyblaethol sydd â'r nod o godi ymwybyddiaeth a gwella dealltwriaeth o effeithiau newid yn yr hinsawdd, stormydd a thywydd eithafol yn y gorffennol, y presennol a'r dyfodol agos ar dreftadaeth ddiwylliannol gyfoethog ein môr a'n harfordir. Rydym yn cysylltu'r tir a'r môr ac yn defnyddio amrywiaeth o dechnegau a dulliau i astudio rhai o'r lleoliadau arfordirol mwyaf eiconig yn Iwerddon a Chymru. Mae'r rhain yn amrywio o sganio laser daearol ac awyr, arolygu geoffisegol a mapio gwely'r môr i samplu paleoamgylcheddol, cloddio a monitro llongddrylliadau.

University; Department of Geography and Earth Sciences; and Geological Survey Ireland. The project began in January 2017 and will run until June 2023. It will benefit from €4.9 million of EU funds through the Ireland Wales Co-operation Programme 2014–2020.

CHERISH is a truly cross-disciplinary project aimed at raising awareness and understanding of the past, present and near-future impacts of climate change, storminess and extreme weather events on the rich cultural heritage of our sea and coast. We link land and sea and employ a variety of techniques and methods to study some of the most iconic coastal locations in Ireland and Wales. These range from terrestrial and aerial laser scanning, geophysical survey and seabed mapping, through to paleoenvironmental sampling, excavation and shipwreck monitoring.

Dyma fap sy'n dangos ble rydym yn gweithio. Dewiswyd yr ardaloedd hyn gyda chymorth asiantaethau, perchnogion tir a grwpiau lleol, yn seiliedig ar y risg o erydu a'r potensial ar gyfer cydweithio i gasglu gwybodaeth a phenderfynu sut i warchod y safleoedd hyn ar gyfer y dyfodol. Ewch i'r adran 'Gweithgareddau' ar wefan ein prosiect i gael map y gellir clicio arno a dysgu am bob ardal astudio.



This is a map showing where we work. These areas were chosen with the help of agencies, landowners and local groups, based on the risk of erosion and potential for working together to gather knowledge and decide how to protect these sites for the future. Visit the 'Activities' section of our project website for a clickable map where you can learn about each study area.

UCHAFBWYNTIAU GORFFENNAF – RHAGFYR 2021

HIGHLIGHTS JULY – DECEMBER 2021

Sganio laser ar dŵr y Black Castle yn Clonmines ger Wexford ym mis Awst 2021.
Laser scanning the Black Castle tower-house at Clonmines near Wexford in August 2021.

GWEITHGAREDDAU GWAITH MAES. CASGLU DATA O'R AWYR AC AR Y MÔR A'R TIR / FIELDWORK ACTIVITIES. DATA GATHERING FROM THE AIR, ON SEA AND LAND

Yn ail hanner 2021, roedd tîm CHERISH yn falch iawn o gael mynd allan o'r diwedd, i ddal i fyny â'n gwaith maes. Ar y tir, aethom ati i gynnal ein hail ddigwyddiad cloddio cymunedol, y tro hwn yng Nghaer Bentir Caerfai yn Sir Benfro, ac ar y môr, deifio am y tro cyntaf at longddrylliad y Bronze Bell, sydd ar rîff Sarn Padrig oddi ar arfordir Cymru. Mae'r ddau ddigwyddiad yn cael sylw yn yr adran 'Ffocws ar CHERISH' yn y cylchlythyr yma. Mae gennym ni lawer i'w ddweud wrthyh chi!

Ym mis Gorffennaf 2021, ar ôl llacio cyfyngiadau COVID, roedd cyfle i dîm CHERISH o Brifysgol Aberystwyth ddychwelyd i Iwerddon am y tro cyntaf ers deunaw mis i wneud rhywfaint o waith maes a oedd wedi'i oedi'n fawr. Gan weithio gyda Ted o'r Rhaglen Ddarganfod, roedd yn wych bod yn ôl o'r diwedd yn gweithio fel tîm CHERISH ar y cyd rhwng Cymru ac Iwerddon.

Ein stop cyntaf oedd Caer Bentir Woodstown ar Arfordir Copr Swydd Waterford. Yn wreiddiol roedd CHERISH wedi bwriadu cynnal digwyddiad cloddio cymunedol yma, ond yn anffodus bu'n rhaid canslo hwn oherwydd y cyfyngiadau a orfodwyd gan y pandemig. Yma mae'r ddaear leol yn hynod ddarniog ac yn erydu'n gyflym, gyda chwymp diweddar iawn i'w weld yn amlwg wrth gyrraedd ac yn dangos stratigraffeg cloddiau a ffosydd y gaer.

Mae cwmp diweddar yng Nghaer Bentir Woodstown, Swydd Waterford wedi datgelu amddiffynfeydd y gaer yn glir.

In the second half of 2021, the CHERISH team was delighted to finally get out and about, to catch up on our fieldwork. On land, we tackled our second community excavation, this time at Caerfai Promontory Fort in Pembrokeshire, and at sea, our first wreck dive on the Bronze Bell, located on the Sarn Padrig reef off the Welsh coast. You'll find both profiled in 'The CHERISH in Focus' section of this newsletter. We've got lots to tell you!

In July 2021 the easing of COVID restrictions allowed the CHERISH team from Aberystwyth University to return to Ireland for the first time in eighteen months to carry out some much-delayed fieldwork. Working with Ted from the Discovery Programme, it was great to finally be back in action as a combined Wales – Ireland CHERISH team.

Our first stop was Woodstown Promontory Fort on Co. Waterford's Copper Coast. CHERISH had originally planned to carry out a community excavation here, but unfortunately this had to be cancelled due to restrictions imposed by the pandemic. Here the local geology is highly fractured and eroding quickly, a very recent collapse was clearly evident on arrival exposing the stratigraphy of the fort's banks and ditches.

Recent collapse at Woodstown Promontory Fort, Co. Waterford has clearly exposed the fort's defences.

Cymerodd Sarah, Patrick a Ted gyfres o greiddiau gwaddod o'r cloddiau a'r ffosydd sy'n diffinio'r gaer bentir. Y nod oedd gweld a allent adnabod ac adfer deunydd dyddio o arwyneb pridd wedi'i gladdu a oedd yn bodoli cyn adeiladu amddiffynfeydd y gaer. Roedd y pridd hwn wedi'i gladdu wedi'i ganfod yn ystod gwaith cofnodi mynediad rhaff darn o'r clogwyn a gwblhawyd gan dîm CHERISH o'r Rhaglen Ddarganfod ym mis Mehefin 2021 (mae gwybodaeth am hyn yn Newyddion CHERISH, Rhifyn 8). Wrth astudio'r creiddiau yn ôl yn y labordy ym Mhrifysgol Aberystwyth ym mis Tachwedd, daethpwyd o hyd i weddillion planhigion, deunydd gwraidd a rhai hadau hyd yn oed yn arwyneb y pridd wedi'i gladdu. Mae sampl o'r hadau wedi cael ei hanfon i Brifysgol Queens, Belfast ar gyfer dyddio radiocarbon ac rydym yn aros yn eiddgar am y canlyniadau, gan obeithio y bydd hyn yn datgelu pryd cafodd amddiffynfeydd y gaer eu hadeiladu gyntaf. Daethpwyd o hyd i ddarn o siarcol o ffos y gaer ac mae hwnnw hefyd wedi cael ei anfon ar gyfer dyddio radiocarbon.

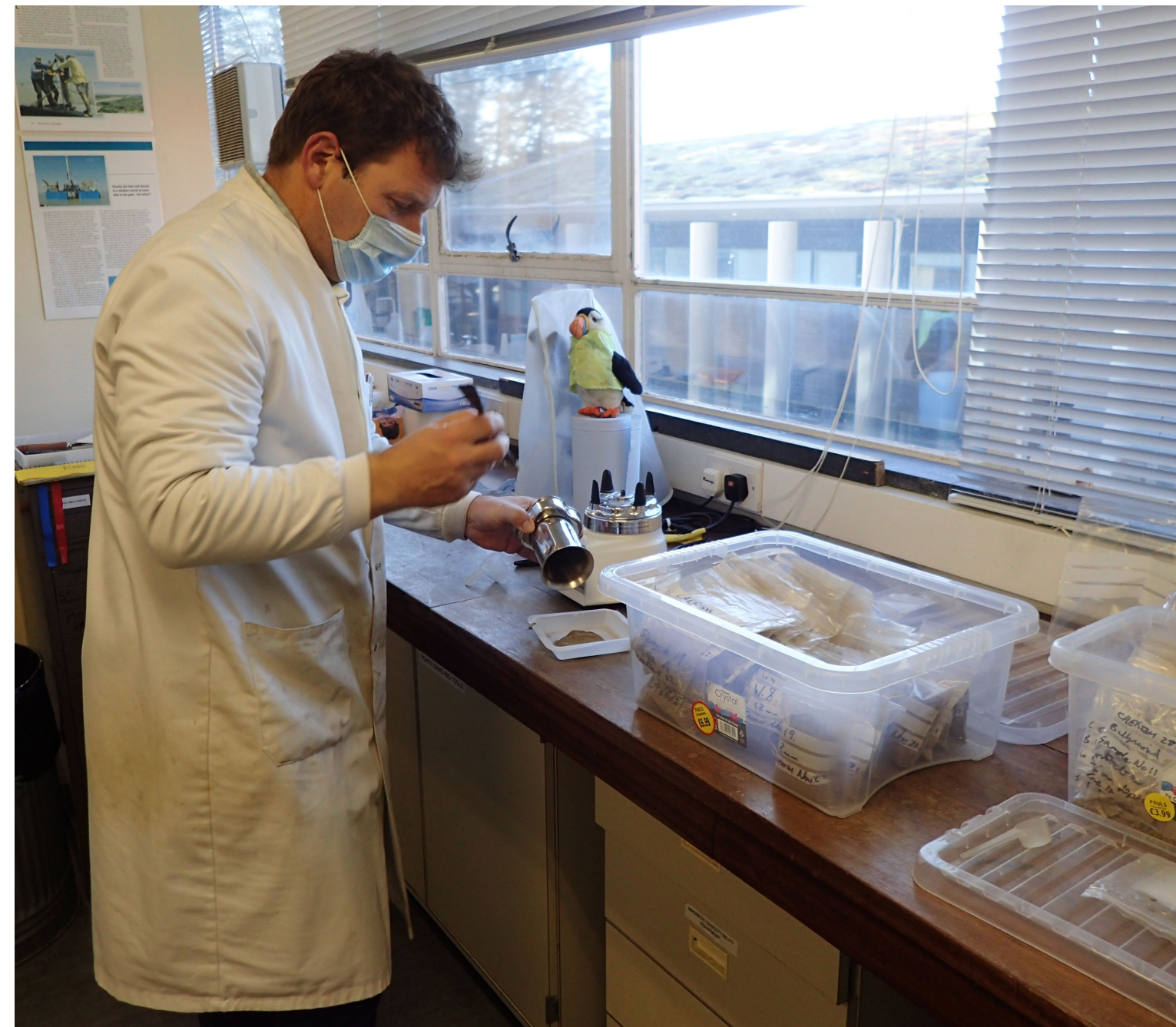
Sarah, Patrick and Ted took a series of sediment cores from the banks and ditches that define the promontory fort. The aim was to see if they could identify and retrieve dating material from a buried soil surface which existed before the fort's defences were built. This buried soil had been identified during rope-access recording of the cliff section completed by the CHERISH team from Discovery Programme in June 2021 (reported in CHERISH News, Issue 8). Studying the cores back in the laboratory at Aberystwyth University in November, plant remains, root material and even some seeds were found in the buried soil surface. A sample of the seeds has been sent to Queens University, Belfast for radiocarbon dating and we eagerly await the results, hoping this will reveal when the fort's defences were first constructed. A fragment of charcoal from the fort's ditch was recovered and has also been sent for radiocarbon dating.



*Creiddio ar draws amddiffynfeydd Caer Bentir Woodstown, Swydd Waterford.
Coring across the defences of Woodstown Promontory Fort, Co. Waterford.*

Ymwelodd tîm CHERISH Cymru ac Iwerddon â'r caeau o amgylch Ynys Dane ger Ballynarrid hefyd i ymchwilio i nodweddion a ganfuwyd yn ein harolwg geoffisegol cynharach. Er gwaetha'r ffaith ein bod wedi creiddio sawl nodwedd gan osgoi stormydd mellt a tharanau ar yr un pryd, ni wnaethom lwyddo i ddod o hyd i unrhyw dystiolaeth bendant o'r hyn y gallent fod ond rydym bellach yn dadansoddi'r samplau yn y labordy i chwilio am dystiolaeth o fwyngloddio am fetel (copr, arian a phlwm) neu ei brosesu. Gobeithiwn y gall hyn ddynodi hanes hir iawn o fwyngloddio ar hyd yr Arfordir Copr, a allai fod yn gysylltiedig â chyfnod y ceirydd pentir.

The CHERISH Wales-Ireland team also visited the fields surrounding Dane's Island near Ballynarrid to investigate features identified in our earlier geophysical survey. Despite coring several features whilst dodging thunderstorms, we were unable to find any definitive evidence of what they might be but are now analysing the samples in the laboratory to look for evidence of metal mining (copper, silver and lead) or processing. We hope this could indicate a very long history of mining along the Copper Coast, potentially associated with the period of the promontory forts.



*Ted yn labordai Prifysgol Aberystwyth yn paratoi samplau i'w dadansoddi, dan lygad barcud Chi'n Gwybod Pwy!
Ted in the lab at Aberystwyth University preparing samples for analysis, under the watchful eye of You Know Who!*

Y stop olaf yn Swydd Waterford oedd Clonea Strand ger Dungarven. Yma, cawsom ganiatâd i ymchwilio i wlybdir yn union y tu ôl i rwystr y traeth. Mae gennym obeithion mawr y gallai'r gwaddodion yma gynnwys cofnod o lifogydd arfordirol a stormydd. Ar brynhawn gwlyb, gwnaethom lwyddo i adfer craidd 4.5 metr o fawn ffen wedi'i gymysgu â darnau o bren. Mae rhan uchaf y craidd yn dangos tystiolaeth o orlifo diweddar (yn ystod y ganrif ddiwethaf) gan y môr. Mae angen dadansoddiad pellach yn ôl yn y labordy yn awr i ddarganfod sut a phryd yn union y cafodd y gwaddodion hyn eu dyddodi.

The final stop in Co. Waterford was Clonea Strand near Dungarven. Here, we had permission to investigate a wetland immediately behind the beach barrier. We have high hopes that sediments here could contain a record of coastal flooding and storminess. On a wet afternoon we managed to recover a 4.5 metre core of fen peat interspersed with woody fragments. The uppermost section of the core shows evidence of recent (last century) inundation by the sea. Further analysis back in the laboratory is now needed to find out exactly how and when these sediments were deposited.



Patrick a Sarah yn creiddio'r gwlybdir y tu ôl i Clonea Strand, ger Dungarven, a darn 50cm o ddeunydd craidd, gyda mawn organig ar ben tywod, gwaddod, a chlai sy'n arwydd o lifogydd arfordirol.

Patrick and Sarah coring the wetland behind Clonea Strand, near Dungarven and a 50cm section of core material, with organic peat on top of sands, silts, and clays indicative of coastal flooding.

Dychwelodd Sarah a Patrick i Iwerddon ym mis Medi, y tro hwn i gornel dde orllewinol y wlad a Childraeth Ferriter yn Swydd Kerry. Fe wnaethant ymuno â Ted o'r Rhaglen Ddarganfod a chynnal gwaith creiddio ar rai o'r ardaloedd na ellid eu harchwilio yn ystod gwaith cloddio CHERISH ym mis Mai 2021 (mae gwybodaeth am hyn yn Newyddion CHERISH, Rhifyn 8). Roedd yr holl gerrig yn y pridd yma yn achosi problemau i'r creiddiwr (mae cerrig mawr yn aml yn rhwystro diametr cul y tiwb craidd), ond roeddem yn gallu cael deunydd o gloddiau a ffosydd y gaer bentir a'r castell a gweld faint o waddod deiliadaeth oedd ar ôl ar safle'r cwt a gloddiwyd. Mae siarcol a gafwyd o'r creiddiau wedi cael ei anfon i'w ddyddio bellach ac rydym yn disgwyl y canlyniadau yn gynnar yn 2022.

Sarah and Patrick made a return visit to Ireland in September, this time to the southwest corner of the country and Ferriter's Cove in Co. Kerry. They joined forces with Ted from the Discovery Programme and undertook coring at some of areas that couldn't be explored during the CHERISH excavation in May 2021 (reported in CHERISH News, Issue 8). The stoniness of the soil here presented problems for the corer (large stones often block the narrow diameter of the core tube), but we were able to get material from the banks and ditches of the promontory fort and castle and see how much occupation sediment remained in the hut site that was excavated. Charcoal obtained from the cores have now been sent for dating with results due early in 2022.



Cefndir trawiadol i'r creiddio yng Nghildraeth Ferriter yn Swydd Kerry. A stunning backdrop to the coring at Ferriter's Cove in Co. Kerry.

Cyn dychwelyd i Gymru a Dilyn, arhosodd y tim yn Clonmines, ger Wexford, i ymchwilio i amgylchedd aberol, lle mae dŵr afon a dyfroedd llanwol yn dechrau gorlifo anheddiad canoloesol. Yma mae gweddillion mynachlog Awstinaidd a thŵr y Black Castle i'w gweld ar lan Afon Owenduff ac mae strwythurau yma wedi'u hadnabod fel ceiau ar gyfer llwytho a dadlwytho nwyddau o gychod a llongau bach. Mae'r ceiau bellach sawl metr o brif sianel yr afon, sy'n arwydd o newid sylweddol ers i'r safle fod yn dref ganoloesol brysur. Casglwyd sawl craidd o lan yr afon i ddarganfod pa mor gyflym mae'r gwaddodion wedi cronni o flaen y ceiau. Rydym yn gobeithio y byddant yn darparu tystiolaeth i ddangos a oedd y ceiau a'r blaendraeth cynharach yn bodoli ar yr un pryd â'r anheddiad canoloesol.

Before returning to Wales and Dublin, the team stopped off at Clonmines, near Wexford to investigate an estuarine environment, where river and tidal waters are starting to inundate a medieval settlement. Here the remains of an Augustinian friary and the Black Castle tower house sit on the edge of the Owenduff River and structures here have been identified as quays for loading and unloading goods from boats and small ships. The quays are now many metres from the main river channel, indicating significant change since the site was a busy medieval town. Several cores were collected from the river margin to find out how quickly the sediments have built up in front of the quays. We're hoping they will provide evidence to indicate whether the quays and earlier foreshore were around at the same time as the medieval settlement.

Bu mwy o greiddio yn ôl yng Nghymru. Ar lanw isel ym mis Hydref, teithiodd tîm CHERISH o Brifysgol Aberystwyth a'r Comisiwn Brenhinol i draeth y Warren ger Abersoch ar Benrhyn Llŷn i greiddio'r mawn rhynglanwol sydd wedi'i orchuddio yn rhannol gan dywod. Yn gynharach yn ystod y prosiect, fe wnaethom adnabod olion carnau anifeiliaid a thystiolaeth o dorri'r mawn, a gwnaethom hefyd ddyddio rhywfaint o'r pren tanddwr a ddaeth i'r golwg ar lanw eithriadol isel. Canfuwyd ei fod dros 7000 o flynyddoedd oed. Gyda chaniatâd Stad y Goron, Cyfoeth Naturiol Cymru a Chyngor Gwynedd, casglwyd 3 metr o ddeunydd creiddio a fydd yn ein galluogi i ddyddio ac ailadeiladu amgylchedd yr ardal yn y gorffennol, sut datblygodd o dirwedd goedig i wlybdir ffen ac, yn y diwedd, i'r traeth tywodlyd rydym yn ei weld heddiw. Tra oeddem ar y traeth, fe wnaethom hefyd edrych ar ar ein 2 safle monitro llongdrylliadau. Yn yr un modd â'n hymweliad diwethaf yn ôl ym mis Mawrth 2021, roedd y ddau wedi'u claddu o dan y tywod.

The coring didn't stop there and back in Wales during low tides in October, the CHERISH team from Aberystwyth University and the Royal Commission travelled to the beach at The Warren near Abersoch on the Llŷn Peninsular to core the intertidal peats that are partly covered by sand. Earlier in the project, we identified animal hoof prints and evidence of cutting in the peat, and we also dated some of the submerged wood revealed at extreme low tide, which turned out to be over 7000 years old. With permission from the Crown Estate, Natural Resources Wales and Gwynedd Council, we collected 3 metres of core material that will enable us to date and reconstruct the past environment of the area, how it developed from a wooded landscape into a fen wetland and finally the sandy beach we see today. Whilst on the beach, we also checked in on our 2 shipwreck monitoring sites. As with our last visit back in March 2021 both remain buried under sand.



Creiddio yn Abersoch yng Ngogledd Cymru. Mae'r craidd o ganlyniad yn dangos cyfres hynod ddiddorol a chlr o fawn, deunydd wedi'i orchuddio gan ddŵr gyda mwy o fawn ar ei ben ac mae gwaith bellach ar droed yn y labordy i gasglu samplau i'w dyddio ac i asesu a deall y newidiadau mawr yn y gyfres.

Coring at Abersoch in North Wales. The resulting core shows a hugely interesting and clear sequence of peat, water-lain material topped by more peat and work is now underway in the lab to pick out samples for dating and to assess and understand the major changes in the sequence.



Wrth i stormydd yr hydref gyrraedd, manteisiodd tîm Aberystwyth ar ddiwrnod braf i greiddio gwlybdir Cwm Dewi rhwng Pwllgwaelod a Chwm yr Eglwys yng Ngogledd Sir Benfro. Mae'r gwlybdir, sydd mewn sianel o ddŵr tawdd rhewlfol, yn cynnwys mwy nag 11 metr o waddod sydd wedi cronni ers diwedd yr oes iâ ddiwethaf. Rydym yn chwilio am dystiolaeth o stormydd enbyd fel y rhai o'r 1850au a ddinistriodd Eglwys Sant Brynach yng Nghwm yr Eglwys.



Creiddio yng Nghwm Dewi, Sir Benfro ac Eglwys Sant Brynach gerllaw, yng Nghwm yr Eglwys, a ddinistriwyd gan stormydd yn y 1850au.

Coring at Cwm Dewi, Pembrokeshire and the nearby St Brynach Church, Cwm yr Eglwys destroyed by storms in the 1850s.

Nid creiddio oedd yr holl waith maes a gwblhawyd gennym. Gwnaethom hefyd gynnal arolygon monitro pellach ac yng Nghymru dechreuodd tîm CHERISH o'r Comisiwn Brenhinol osod marcwyr monitro arolygon yn rhai o'n safleoedd allweddol. Bydd y rhain yn waddol i CHERISH a fydd yn helpu i greu rhwydwaith manwl gywir ar gyfer monitro a chanfod newid yn y dyfodol.

Roedd arolygon monitro ailadroddus yn cynnwys yr anheddiad canoloesol yn Clonmines. Ym mis Awst 2021 daeth tîm CHERISH o'r Rhaglen Ddarganfod ar ymweliad arolygu. Aethant ati i gynnal arolwg cerdded ailadroddus ar hyd glan yr afon sy'n erydu, lle cofnodwyd tystiolaeth o weithgarwch diwydiannol ar ffurf slag a chrochenwaith canoloesol, ynghyd â phwysau gwellt carreg a theils to ar y blaendraeth. Ailarchwiliwyd y cei carreg a'r pier, a rhyd ar ochr ddwyreiniol yr aber hefyd, ynghyd â nodwedd fwy enigmatig, o bosibl yn rhan o lwybr i'r lan neu sylfaen adeilad. Gwnaethom nodi bod mwy o erydiad wedi datgelu mwy o gerrig o'r nodwedd hon.

As the autumnal storms began to roll in, the Aberystwyth team took advantage of a nice day to core Cwm Dewi wetland between Pwllgwaelod and Cwm yr Eglwys in North Pembrokeshire. The wetland, which sits within a glacial meltwater channel, contains over 11 metres of sediment which has accumulated since the end of the last ice age. We are looking for evidence of severe storms like the ones from the 1850s which destroyed St Brynach Church at Cwm yr Eglwys.



Our fieldwork wasn't all coring. We also did further monitoring surveys and in Wales the CHERISH team from the Royal Commission began installing survey monitoring markers at some of our key sites. These will be a legacy of CHERISH that will help create an accurate network for monitoring and change detection in the future.

Repeat monitoring surveys included the medieval settlement at Clonmines. In August 2021 the CHERISH team from the Discovery Programme made a return survey visit. They did a repeat walk-over survey along the eroding edge of the river, where evidence of industrial activity in the form of slag and medieval pottery were recorded, along with stone thatch weights and roof tiles on the foreshore. The stone quay and pier, and a ford on the eastern side of the estuary, were also re-examined along with a more enigmatic feature, possibly part of a path to the shore or building foundation. We noted that increased erosion had exposed more stones of this feature.

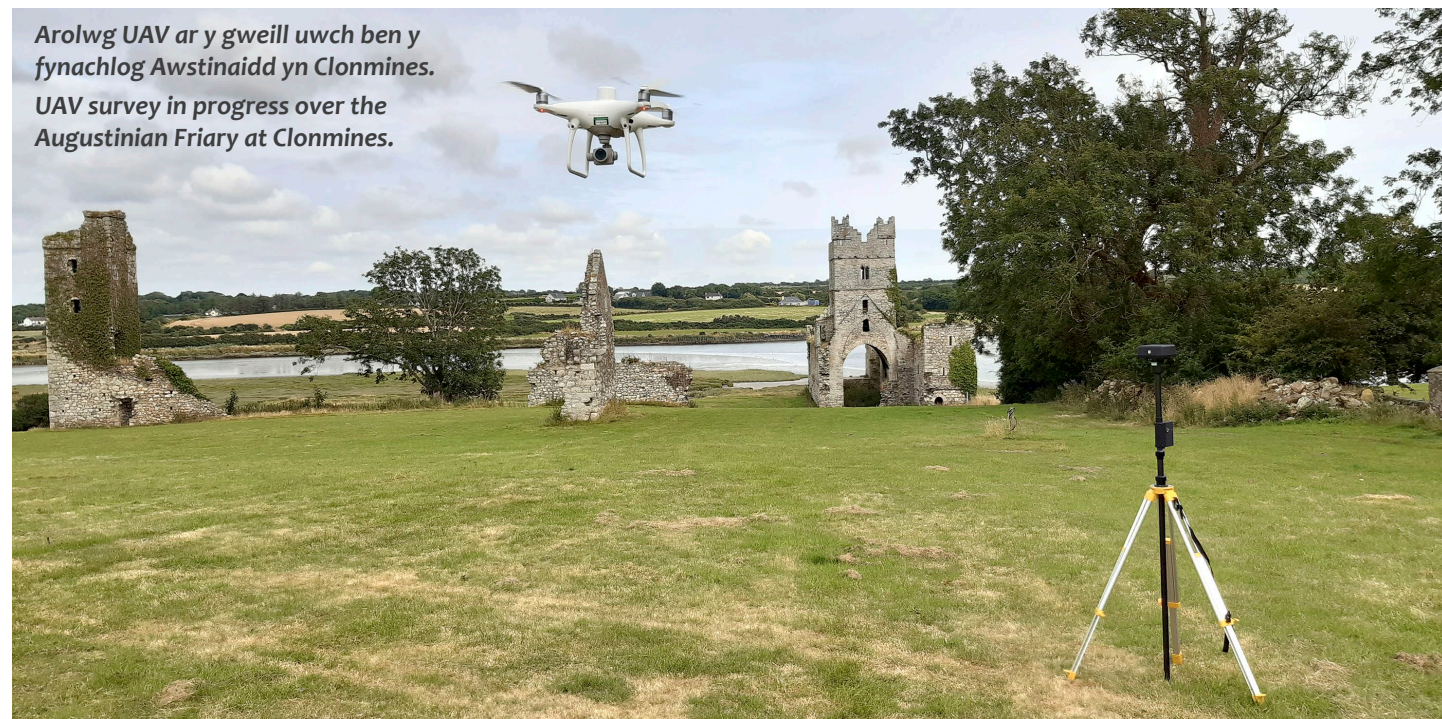


Sandra o'r Rhaglen Ddarganfod yn cymryd nodiadau yn ystod yr arolwg cerdded yn Clonmines ger Wexford, a rhai o'r arteffactau a ddarganfuwyd.

Sandra from the Discovery Programme taking notes during the walk-over survey at Clonmines near Wexford, and some of the artefacts found.

Gwnaeth y tîm hefyd gynnal arolwg manwl ailadroddus o Eglwys yr Abaty a'r ardal ehangach, gan ddefnyddio sganiwr laser a Cherbyd Awyr Heb Oruchwyliaeth (UAV). Bydd data'r arolwg yn cael eu cymharu â data a gafwyd o'n harolwg sylfaen gwreiddiol ym mis Mehefin 2018 a byddant yn nodi ac yn mesur unrhyw newid sydd wedi digwydd, fel y cyfraddau erydu ar hyd glan yr afon. Cwblhawyd arolwg sgan laser hefyd ar gyfer tŵr Black Castle gan ddefnyddio sganiwr Trimble TX8, a'i geogyfeirio gan ddefnyddio rheolydd System Lloeren Llywio Byd-eang (GNSS) o'r derbynnydd Trimble R10.

The team also did a repeat precision survey of the Abbey Church and wider area, using a laser scanner and Unmanned Aerial Vehicle (UAV). The resulting survey data will be compared against data obtained from our original base-line survey in June 2018 and will identify and quantify any change that has taken place, like the rates of erosion along the edge of the river. A laser scan survey was also completed for Black Castle tower-house using a Trimble TX8 scanner, and georeferenced using Global Navigation Satellite System (GNSS) control from the Trimble R10 receiver.



Arolwg UAV ar y gweill uwch ben y fynachlog Awstinaidd yn Clonmines. UAV survey in progress over the Augustinian Friary at Clonmines.



Ym mis Medi dychwelodd y Rhaglen Ddarganfod, gyda chymorth y Gwasanaethau Morol, i Gaer Rosslare yn aber Harbwr Wexford, i weld sut mae'r safle wedi newid ers ein hymweliad diwethaf bedair blynedd yn ôl. Mae pentref, a adawyd yn wag yn y 1920au, dan y dŵr ar lanw uchel, a chan ddefnyddio UAV a cherdded rhwng y llanw, gwelsom newidiadau yn y gorchudd tywod gan ganiatáu datgelu ehangach ar adeiladau wedi dymchwel, a thyfiant gwymon. Roedd rhai ardaloedd yn parhau i fod yn hawdd eu hadnabod, fel lloriau carreg Tŷ'r bad achub, pyst pren y lanfa refeniw, a morglawdd a oedd yn gwarchod sgwâr y pentref yn wreiddiol.

Ym mis Hydref ymunodd timau CHERISH o'r Rhaglen Ddarganfod ac Arolwg Daearegol Iwerddon i gynnal Asesiad Parth Arfordirol o erydiad ac archaeoleg o Loughshinny i Rogerstown yng Ngogledd Swydd Delyn. Roedd hyn yn golygu dechrau'n gynnar ar foreau oer i fanteisio i'r eithaf ar lanw isel y gwanwyn. Ar ôl asesiad desg trwyadl gan ddefnyddio hen luniau o'r awyr, siartiau morol, darluniau a ffotograffau, cofnododd ac asesodd y tîm 34 o safleoedd, a dim ond 7 ohonynt oedd wedi'u cofnodi'n flaenorol. Datgelodd y safleoedd lawer iawn o drysorau, yn amrywio o fflintiau Mesolithig i rannau o longau'r 20fed ganrif ac roeddent yn cynnwys tomenni cregyn sy'n erydu sy'n gysylltiedig â cheyrydd pentir, beddau â leinin carreg y rhoddwyd gwybod amdanynt i Amgueddfa Genedlaethol Iwerddon a Garda Síochána, rhydau ar draws yr aber, mwyngloddiau copr, harbyrau, clostiroedd cylch a glanfeydd yn gysylltiedig â thyrâu Martello. Mae hyn wir yn tynnu sylw at bwysigrwydd arolwg cerdded fel rhan o Asesiad Parth Arfordirol.

In September the Discovery Programme, with the help of Marine Services, returned to Rosslare Fort at the mouth of Wexford Harbour, to see how the site has changed since our last visit four years ago. A village, abandoned in the 1920s is submerged at high tide, and using a UAV and intertidal walkover we observed changes in the sand cover allowing a wider exposure of collapsed buildings, and growth of seaweeds. Some areas were still identifiable, like the stone floors of the lifeboat House, wooden posts of the revenue jetty, and a seawall that had originally protected the village square.

In October the CHERISH teams from Discovery and Geological Survey Ireland joined forces to conduct a Coastal Zone Assessment of erosion and archaeology from Loughshinny to Rogerstown in North County Dublin. This meant early cold starts to make the most of low spring tides. After a thorough desk-top assessment using old aerial photographs, maritime charts, drawings and photographs, the team recorded and assessed 34 sites, of which only 7 had previously been recorded. The sites revealed so many treasures, ranging from Mesolithic flints to parts of 20th-century ships and included eroding shell middens associated with promontory forts, stone-lined graves which were reported to the National Museum of Ireland and Garda Síochána, fords across the estuary, copper mines, harbours, ring enclosures and landing places associated with Martello towers. This really highlights the importance of walk-over survey as part of a Coastal Zone Assessment.



Cofnodi mwynglawdd yn ystod yr Asesiad Parth Arfordirol yn Loughshinny yng Ngogledd Swydd Delyn. Recording a mine during the Coastal Zone Assessment at Loughshinny in North County Dublin.

Fe wnaethom ni ychydig o gloddio hefyd! Ym mis Awst cynhaliwyd ail dymor o gloddio ym mryngaer arfordirol Dinas Dinlle yng Ngwynedd. Mae'r fryngaer yn erydu. Aethom ati i ailagor ac ymestyn ffosydd o waith cloddio cymunedol CHERISH yn 2019 (mae gwybodaeth am hyn yn Newyddion CHERISH, Rhifyn 5). Arweiniwyd y cloddio gan Ymddiriedolaeth Archaeolegol Gwynedd gyda byddin o wirfoddolwyr lleol anhygoel, a rhai o dîm CHERISH o'r Comisiwn Brenhinol! Roedd y cloddio'n bartneriaeth rhwng Ymddiriedolaeth Archaeolegol Gwynedd, Cadw, CHERISH, yr Ymddiriedolaeth Genedlaethol, Prifysgol Bangor, ac Ardal o Harddwch Naturiol Eithriadol Llŷn. Braf iawn oedd gweld cymaint o ddiddordeb cyhoeddus yn ein gwaith ni unwaith eto, gyda channoedd o bobl yn ymweld â'r safle yn ystod y pum wythnos o gloddio a thua 300 o ymwelwyr yn ystod y Diwrnod Agored.



Golygfa o'r awyr yn dangos lleoliad y 2 ffos gloddio yn agos at ymyl bryngaer Dinas Dinlle sy'n erydu yng Ngwynedd.
Aerial view showing the location of the 2 excavation trenches close to the eroding edge of Dinas Dinlle hillfort, Gwynedd.

Fe wnaethom agor dwy ffos fel estyniadau i'r ardaloedd a gloddiwyd yn 2019. Yn Ffos 1 datgelwyd graddfa lawn y tŷ crwn hynod o'r diwedd. Mae'n strwythur sylweddol sy'n mesur 13.6 metr mewn diametr gyda waliau 2.5 metr o drwch sy'n anarferol iawn. Mae hwn yn debygol o fod yn adeilad o statws uchel yn y fryngaer. Cloddiwyd dau gwadrant o'r tŷ crwn i lawr i lefel llawr is ac roedd y darganfyddiadau'n cynnwys carreg breuan droi gyflawn

We also did some digging! In August a second season of excavation took place at the eroding coastal hillfort of Dinas Dinlle in Gwynedd, reopening and extending trenches from the 2019 CHERISH community excavation (reported in CHERISH News, Issue 5). The excavation was led by Gwynedd Archaeological Trust with an army of amazing local volunteers, and some of the CHERISH team from the Royal Commission! The excavation was a partnership between Gwynedd Archaeological Trust, Cadw, CHERISH, the National Trust, Bangor University, and the Llŷn Area of Outstanding National Beauty. It was great to again see so much public interest in our work, with hundreds of people visiting the site over the five-week excavation and around 300 visitors to the Open Day.

We opened two trenches as extensions to the areas excavated in 2019. In Trench 1 the full extent of the remarkable roundhouse was finally revealed. It's a substantial structure measuring 13.6 metres in diameter with highly unusual 2.5 metre thick walls. This is likely to have been a high-status building within the hillfort. Two quadrants of the roundhouse were excavated down to a lower floor level and finds included a complete rotary

(ar gyfer malu grawn) a sawl darn o grochenwaith Rhufeinig, gan gynnwys potiau coginio wedi'u llosgi'n ddu o Dorset, nwyddau Samiaidd o ansawdd uchel o Gaul a rhan fawr o fortariwm, a llestr wedi'i orchuddio â graean ar gyfer malu cynhwysion bwyd ar gyfer sawsiau neu baratoadau eraill.

quern stone (for grinding grain) and several shards of Roman pottery including black-burnished cooking pots from Dorset, high-quality Samian ware from Gaul and a large part of a mortarium, a vessel coated in grit for grinding food ingredients for sauces or other preparations.



Tŷ crwn Dinas Dinlle yn ei holl ogoniant.
The Dinas Dinlle roundhouse in all its glory. (© Gwynedd Archaeological Trust)

Datgelodd Ffos 2 gyfres gymhleth o nodweddion archaeolegol. Roedd y cynharaf yn ymddangos fel arwyneb metelaidd yng nghanol y ffos, ynghyd â rhan o dŷ crwn yn y gornel ogledd orllewinol. Ni ddaethpwyd o hyd i unrhyw arteffactau Rhufeinig o'r strwythur, sy'n

Trench 2 revealed a complex series of archaeological features, the earliest appeared to be a metallised surface in the centre of the trench, along with a part of a roundhouse in the northwest corner. No Roman artefacts were recovered from the structure, suggesting it may



Darn mawr o fortariwm Rhufeinig. Rhybed atgyweirio haearn yw'r marc tywyll.
A large fragment of Roman mortarium. The dark mark is an iron repair rivet (© Gwynedd Archaeological Trust).



Casgliad o grochenwaith Rhufeinig wedi torri ac wedi'i effeithio gan wres – Y cyfan o un neu ddau o lestri yn Ffos 2.
A collection of broken and heat affected Roman pottery – All from one or two vessels in Trench 2 (© Gwynedd Archaeological Trust).

awgrymu ei fod yn dyddio o'r Oes Haearn. Ar ôl i'r tŷ gael ei adael, cafodd ei lenwi â deunydd tomenni (cregyn) a cherrig bach, llawer ohonynt wedi'u hollti gan dân. Ym mhen deheuol y ffos roedd clawdd pridd a cherrig ar ychydig o dro a oedd wedi'i orchuddio â phentwr o gerrig rhydd, a chanfuwyd broetsh plât Rhufeinig efydd ar ei ben.

Datgelodd y clawdd deras adeiledig, gydag ardal o losgi trwm ar yr ochr ddwyreiniol. Roedd hwn yn cynnwys darnau niferus o grochenwaith wedi'u llosgi'n ddu, llawer ohonynt wedi'u heffeithio gan wres a chwalu'n ddarnau mân. Roedd ochr orllewinol y teras yn cynnwys pentwr dinodwedd o gerrig mawr, yn gysylltiedig o bosibl â strwythur a adeiladwyd y tu mewn i'r rhagfur i'r de o'r ardal gloddio.

Mae'r gwaith ar ôl y cloddio ar y gweill bellach, ac rydym yn edrych ymlaen yn fawr at weld y canlyniadau llawn.



Nodweddion wedi dod i'r golwg yn Ffos 2.
Features exposed in Trench 2. (© Gwynedd Archaeological Trust).

be Iron Age in date. After the house was abandoned, it was filled with midden material (shells) and small stones, many fire-cracked. At the southern end of the trench was a slightly curving earth and stone bank that was covered in a dump of loose stone, on top of which a bronze Roman plate brooch was found. The bank revealed a built-up terrace, with an area of heavy burning on the eastern side. This contained numerous shards of black-burnished pottery, much of it strongly heat affected and smashed into small pieces. The western side of the terrace contained a featureless pile of large stones, potentially associated with a structure built into the inside of the rampart to the south of the excavation area.

Post excavation work is now underway, and we can't wait to see the full results.

YMGYSYLLTU / ENGAGEMENT

Ar Awst 18 2021 roeddem mor falch o'r diwedd o allu lansio arddangosfa deithiol Newid Hinsawdd a Threftadaeth Arfordirol CHERISH yn Iwerddon yn ystod yr Wythnos Dreftadaeth Genedlaethol. Ei lleoliad cyntaf oedd Llyfrgell dlr Lexlcon yn Dún Laoghaire ac roedd yn cynnwys arddangosfa awyr agored o luniau CHERISH wrth ymyl y llyfrgell ym Mharc Moran. Roedd y rhain yn gefndir i'n digwyddiad lansio awyr agored yn ogystal â marchnad wythnosol, perfformiadau cerddorol, dramâu a dangosiadau ffilm.

On August 18 2021 we were so pleased to finally be able to launch the CHERISH Climate Change and Coastal Heritage travelling exhibition in Ireland during National Heritage Week. Its first location was the dlr Lexlcon Library in Dún Laoghaire and included an outdoor exhibition of CHERISH images next to the library in Moran Park. These formed the backdrop to our outdoor launch event as well as a weekly market, music performances, plays and film screenings.



Arddangosfa dan do ac awyr agored CHERISH yn Llyfrgell dlr Lexlcon yn Dún Laoghaire.
The indoor and outdoor CHERISH exhibition at the dlr Lexlcon Library in Dún Laoghaire.

Lansiwyd yr arddangosfa gan An Cathaoirleach Cyngor Sir Dun Laoghaire-Rathdown, Lettie McCarthy. Cafwyd areithiau gan An Cathaoirleach Lettie McCarthy, Tom Dowling, Cadeirydd bwrdd y Rhaglen Ddarganfod a Sean Cullen, Pennaeth yr Uned Forol ac Arfordirol, Arolwg Daearegol Iwerddon. Cafodd ei harddangos ar lefel 3 llyfrgell dlr Lexlcon o 10 Awst tan ddiwedd mis Medi ac roedd yn cyd-daro ag Wythnos Gweithredu dros yr Hinsawdd Dulyn. Ymwelodd mwy na 26,000 o bobl â'r llyfrgell yn ystod y cyfnod hwn a chreodd yr Irish Times fideo am yr arddangosfa a'i lansiad a gallwch ei weld yma: <https://www.irishtimes.com/news/environment/how-is-climate-change-impacting-the-cultural-heritage-of-ireland-s-coasts-1.4653133>

The exhibition was launched by An Cathaoirleach of Dun Laoghaire-Rathdown County Council, Lettie McCarthy. There were speeches by An Cathaoirleach Lettie McCarthy, Tom Dowling, Chairperson of the board of the Discovery Programme and Sean Cullen, Head of the Marine and Coastal Unit, Geological Survey Ireland. It was displayed on level 3 of the dlr Lexlcon library from 10 August until the end of September and coincided with Dublin Climate Action week. Over 26,000 people visited the library in this period and the Irish Times created a video about the exhibition and its launch which you can view here: <https://www.irishtimes.com/news/environment/how-is-climate-change-impacting-the-cultural-heritage-of-ireland-s-coasts-1.4653133>



Ar ôl dlr Lexlcon symudodd yr arddangosfa i Lyfrgell Rush yng Ngogledd Swydd Dulyn. Diolch yn fawr i Marian Keyes a'r tîm yn Llyfrgell dlr Lexlcon ac Aoife O'Reilly a'r tîm yn Llyfrgell Rush am eu cefnogaeth a'u cymorth. Bydd yr arddangosfa'n parhau i deithio yn Iwerddon a Chymru drwy gydol 2022, edrychwch ar yr adran 'Dyddiadau ar gyfer eich Dyddiadur' yn y cylchlythyr am ddyddiadau sydd i ddod.

After dlr Lexlcon the exhibition moved to Rush Library in North County Dublin. Many thanks to Marian Keyes and the team in the dlr Lexlcon Library and Aoife O'Reilly and the team in Rush Library for their support and assistance. The exhibition will continue to travel in both Ireland and Wales throughout 2022, take a look at the 'Dates for your Diary' section of the newsletter for upcoming dates.



Arddangosfa CHERISH yn Llyfrgell Rush yng Ngogledd Swydd Dulyn.
The CHERISH exhibition at Rush Library in North County Dublin.

Fel erioed, rydym wedi parhau i ddarparu darlithoedd ar y prosiect i amrywiaeth o gynulleidfaoedd. Rhoddodd Sandra Henry gyflwyniad fel rhan o gyfres a drefnwyd gan Amgueddfa Genedlaethol Iwerddon ar newid hinsawdd a threftadaeth yn ystod Wythnos Dreftadaeth Iwerddon a Toby Driver i Brosiect Treftadaeth Mewn Perygl Gogledd America a gynhaliwyd gan Rwydwaith Archaeoleg Gyhoeddus Florida (FPAN) ar 'Archwilio Treftadaeth Sy'n Erydu ar Ymylon Cymru'. Fel rhan o'i sgwrs, bu'n rhaid i Toby ddewis trac sain rhagarweiniol i bawb gydganu ag ef – roedd ei ddewis yn hynod briodol i'r testun, sef 'Islands in the Stream' gan Dolly Parton a Kenny Rogers!

Cynhaliwyd COP26, cynhadledd Newid Hinsawdd y Cenhedloedd Unedig, yn Glasgow rhwng 31 Hydref a 12 Tachwedd ac ymunodd CHERISH ag eraill i godi proffil #TreftadaethHinsawdd yn ystod y cyfnod cyn ac yn ystod y digwyddiad. Fe wnaethom gyfrannu at sawl digwyddiad COP26 a siarad ynddynt – roedd Toby Driver yng nghynhadledd rithwir ICOMOS UK: Hyrwyddo Treftadaeth Ddiwylliannol fel Sbardun Allweddol ar gyfer Gweithredu dros yr Hinsawdd yn Lleol, roedd Sarah Davies mewn Uwchgynhadledd Treftadaeth Gwydnwch Hinsawdd dan arweiniad Historic Scotland ac roedd Louise Barker mewn digwyddiad gan y Cyngor Prydeinig-Gwyddelig - Diwylliant a Chymunedau Arfordirol, oedd yn cael ei ffrydio'n fyw o COP ei hun. Ar gyfer y digwyddiad hwn helpodd CHERISH, ynghyd â phrosiectau eraill o bob rhan o Brydain ac Iwerddon, gyda chreu dwy ffilm, a gynhyrchwyd gan Tanya Venture. Darluniwyd a lleisiwyd 'Ebb and Flow', cerdd a ysgrifennwyd gan Tara Montane ar gyfer COP26, gan aelod-wladwriaethau'r Cyngor Prydeinig-Gwyddelig. Mae ar gael yma (<https://youtu.be/LH3MTYwQ9jl>) ac mae'n werth gwrandao ar yr ieithoedd bendigedig o bob cwr o'n Hynysodd, gan gynnwys lleisiau rhai o dîm CHERISH, a lluniau gwyh o brosiect CHERISH. Mae'r ail ffilm 'Future Voices' hefyd yn cynnwys rhai o aelodau iau tîm CHERISH – rhybudd: rhy ciwt! (<https://youtu.be/-GFPmeMlgUw>)

Ar gyfer COP26 buom hefyd yn cydweithio â dau brosiect treftadaeth arfordirol arall yn y DU – CITiZAN a SCAPE, a'r archaeolegydd Marcy Rockman i gynhyrchu cyfres o ffilmiau i godi ymwybyddiaeth o effaith newid hinsawdd ar dreftadaeth arfordirol ac arddangos astudiaethau

As ever, we've continued to provide lectures on the project to a variety of audiences. Sandra Henry presented as part of a series organised by the National Museum of Ireland on climate change and heritage during Ireland's Heritage Week and Toby Driver to the North American Heritage At Risk Project hosted by the Florida Public Archaeology Network (FPAN) on 'Exploring Eroding Heritage at the Edge of Wales'. As part of his talk, Toby had to pick an introductory soundtrack for all to sing along to – his choice the very relevant 'Islands in the Stream' by Dolly Parton and Kenny Rogers!

COP26, the UN Climate Change conference was held in Glasgow from 31 October to 12 November and CHERISH joined forces with others to raise the profile of #ClimateHeritage both in the run up to and during the event. We contributed to and spoke at several COP26 events – Toby Driver was at the ICOMOS UK virtual conference: Promoting Cultural Heritage as a Key Driver for Local Climate Action, Sarah Davies was at an Historic Scotland led Climate Resilience Heritage Summit and Louise Barker was at a British-Irish Council – Culture and Coastal Communities event, live-streamed from COP itself. For this event CHERISH along with other projects from around Britain and Ireland helped with the creation of two films, produced by Tanya Venture. 'Ebb and Flow' a poem written by Tara Montane for COP26 was illustrated and voiced by British-Irish Council member states. It's available here (<https://youtu.be/LH3MTYwQ9jl>) and well worth listening to the wonderful languages from across our Isles, including some CHERISH team voices, and some great imagery from the CHERISH project. The second film 'Future Voices' also includes some of our younger CHERISH team members – warning: cuteness overload! (<https://youtu.be/-GFPmeMlgUw>)

For COP26 we also teamed up with two other coastal heritage projects in the UK – CITiZAN and SCAPE, and archaeologist Marcy Rockman to produce a series of films raising awareness of the impact of climate change on coastal heritage and showcasing case studies from across our project areas. During the period of COP26 we launched a new film every day across our social media

achos o ardaloedd ein prosiect. Yn ystod cyfnod COP26 lansiwyd ffilm newydd gennym bob dydd ar ein platfformau cyfryngau cymdeithasol a gellir gweld y rhain i gyd yn awr yma: <https://youtube.com/playlist?list=PLQDhYzL8hT218vaDGioZDO7YX8Y54RN62>

Ac yn olaf, ym mis Tachwedd, roedd partneriaid CHERISH wrth eu bodd yn gallu cyfarfod wyneb yn wyneb eto, y tro cyntaf ers mis Mawrth 2020. Cynhaliwyd ein cyfarfod partneriaid yn Sir Benfro a chawsom gyfle i gynnwys ymweliad â rhywfaint o archaeoleg leol, gan gynnwys siambr gladdu wych Pentre Ifan.

platforms and these can now all be viewed here: <https://youtube.com/playlist?list=PLQDhYzL8hT218vaDGioZDO7YX8Y54RN62>

And finally, in November, CHERISH partners were delighted to be able to meet face to face again, the first time since March 2020. We held our partner meeting in Pembrokeshire and were able to include a visit of some local archaeology, including the fabulous Pentre Ifan burial chamber.



Tîm CHERISH gyda'i gilydd o'r diwedd, Tachwedd 2021. Roedd Pentre Ifan yn Sir Benfro yn lleoliad perffaith ar gyfer llun tîm. The CHERISH team together at last, November 2021. Pentre Ifan in Pembrokeshire provided the perfect location for a team photo.

Cofiwch edrych ar ein blogiau ar wefan CHERISH am astudiaethau achos gwyh y prosiect <http://cherishproject.eu/en/news/blog-posts/>

Don't forget to check our blog-posts on the CHERISH website for some great project case studies <http://cherishproject.eu/en/news/blog-posts/>

CHERISH DAN Y CHWYDDWYDR / CHERISH IN FOCUS

Darparu golwg fanylach
ar agweddau ar brosiect
CHERISH, gan gynnwys ein
safleoedd astudio a'r tîm.

Providing a more in-depth
look at aspects of the CHERISH
project, including our study
sites and the team.

Ffos 1 ar draws y tu
mewn i Gaer Bentir
Caerfai sy'n erydu.
Trench 1 across
the eroding
interior of Caerfai
Promontory Fort.

CLODDIO AR GYRION CYMRU: ARCHAEOLEG GYMUNEDOL A NEWID HINSAWDD YNG NGHAEER BENTIR CAERFAI, SIR BENFRO / DIGGING AT THE EDGE OF WALES: COMMUNITY ARCHAEOLOGY AND CLIMATE CHANGE AT CAERFAI PROMONTORY FORT, PEMBROKESHIRE



Y gaer bentir arfordirol gynhanesyddol
ddramatig sy'n erydu yng Nghaerfai.
Allwch chi weld y 2 ffos gloddio?
The dramatic and eroding prehistoric
coastal promontory fort at Caerfai. Can
you spot the 2 excavation trenches?

Mae arfordir hyfryd, gwyntog penrhyn Tyddewi yn Sir Benfro, Cymru, wedi'i amgylchynu gan Lwybr Arfordir Sir Benfro sy'n denu miloedd o gerddwyr bob blwyddyn, yn chwilio am harddwch naturiol dramatig, clogwyni serth, a childraethau godidog sy'n cael eu cofleidio gan draethau o dywod gwyn. Ond mae'r arfordir hardd hwn hefyd yn gyforiog o safleoedd hanesyddol ac archaeolegol.

Ychydig i'r de o ddinas leiaf Prydain, Tyddewi, mae'r gaer bentir arfordirol gynhanesyddol ddramatig sy'n erydu yng Nghaerfai. Dyma leoliad digwyddiad cloddio cymunedol prysur ym mis Medi 2021, a gynhaliwyd gan DigVentures a'i dîm o archaeolegwyr ar gyfer Prosiect CHERISH, mewn partneriaeth â Pharc Cenedlaethol Arfordir Penfro a'r Ymddiriedolaeth Genedlaethol. Hwn oedd y cloddio gwyddonol cyntaf erioed ar y pentir. Dros bythefnos, bu 140 o wirfoddolwyr lleol a 10 archaeolegydd yn gweithio i ddarganfod ei gyfrinachau cyn i fwy gael ei golli i'r môr.

The gorgeous, windswept coastline of St David's peninsula in Pembrokeshire, Wales, is lined by the Pembrokeshire Coastal Path which draws thousands of walkers every year, seeking dramatic natural beauty, sheer cliffs, and pristine coves hugged by white sandy beaches. But this beautiful coastline is also rich in historic and archaeological sites.

Just to the south of Britain's smallest city, St David's, is the dramatic, eroding prehistoric coastal promontory fort at Caerfai. This was the scene of a busy community excavation in September 2021, run by DigVentures and its team of archaeologists for the CHERISH Project, partnering with the Pembrokeshire Coast National Park and the National Trust. It was the first ever scientific excavation on the headland. Over two weeks, 140 local volunteers and 10 archaeologists worked to discover its secrets before more is lost to the sea.



Rhai o'r gwirfoddolwyr gweithgar yn gwneud y gwaith corfforol caled o ddad-dywarchu a glanhau Ffos 1 yn ystod ychydig ddyddiau cyntaf y cloddio.

Some of the hard-working volunteers undertaking the physically tough work of de-turfing and cleaning Trench 1 during the first few days of the excavation.

Mae Caerfai, sy'n cael ei adnabod hefyd fel caer bentir Penpleidiau, yn un o bron i 60 o safleoedd tebyg ar hyd arfordir garw Sir Benfro. Roedd safleoedd ar ben y clogwyni yn darparu lleoliadau delfrydol ar gyfer ymsefydlu yn ystod yr Oesau Efydd a Haearn diweddarach. Daeth mynediad i'r môr â chyfoeth o adnoddau morol a chyfleoedd masnachu, a hefyd gallai'r clogwyni arfordirol mwyaf peryglus a'r tyllau chwythu fod wedi bod o bwysigrwydd seremonïol i gymunedau cynnar.

Os ewch chi i Gaerfai heddiw, fe welwch chi yn gyntaf ei phrif gloddiau amddiffynnol sy'n sefyll hyd at 3.5 metr o uchder. Yn wahanol i'r rhan fwyaf o'r safleoedd eraill tebyg, ond llai, sy'n cael eu hamddiffyn gan ddim ond un neu ddwy res o wrthgloddiau, mae'r fynedfa i Gaerfai yn cael ei hamddiffyn gan bedwar clawdd hanner cylch anferth sy'n ymestyn allan. Ewch heibio i'r cloddiau enfawr hyn, a'r peth nesaf y byddwch yn ei wynebu yw siwrnai sy'n ddigon i godi gwallt eich pen ar draws rhimyn cul o dir sy'n dod â chi at bentir sydd wedi'i wahanu yn gyfan gwbl bron oddi wrth y tir mawr gan hollt.

Fel y safleoedd arfordirol eraill sy'n cael eu hastudio gan CHERISH, mae Caerfai yn dioddef o fygythiadau niferus. Fel safle agored ar ben clogwyn, mae'n cael ei guro gan foroedd stormus a gwyntoedd cryfion. Mae ogof fôr naturiol o dan y pentir, ynghyd â ffawtlinau yn y creigwely, wedi cyflymu'r erydiad a'r dymchweliad, gyda thua 13 metr o dir wedi'i golli yn ystod y ganrif ddiwethaf. Mae glawiad dwysach a chynnydd mewn dŵr daear, ill dau yn ganlyniad i newid hinsawdd, wedi arwain hefyd at

Caerfai, also known as Penpleidiau promontory fort, is one of nearly 60 similar sites dotted around the rugged Pembrokeshire coast. Cliff-top positions provided ideal locations for settlement during the later Bronze and Iron Ages. Access to the sea brought rich maritime resources and trading opportunities, while the most dangerous coastal cliffs and blow-holes may also have held a ceremonial importance for early communities.

If you visit Caerfai today, you will first see its main defensive banks which stand up to 3.5 metres tall. Unlike most of its smaller companions which are defended by just one or two rows of earthworks, the entrance to Caerfai is defended by four massive semi-circular banks radiating outwards. Make it past these enormous banks, and the next thing you'll face is a hair-raising walk across a narrow strip of land which brings you to a promontory that is almost entirely separated from the mainland by a chasm.

Like other coastal sites under study by CHERISH, Caerfai is suffering from multiple threats. As an exposed cliff-top site, it is battered by stormy seas and high winds. A natural sea cave under the promontory, together with fault lines in the bedrock, have both accelerated erosion and collapse, with around 13 metres of land lost in the last century. Intensifying rainfall and increasing groundwater, both consequences of climate change, have also led to the collapse of softer sediments. The four great earthen ramparts

ddymchwel gwaddodion meddalach. Mae bygythiadau gwahanol i'r pedwar rhagfur pridd mawr sy'n amddiffyn y pentir; mae tyllau cwningod helaeth a gwreiddiau dwfn y rhedyn a'r drain duon yn niweidio gweddillion archaeolegol sydd wedi'u claddu.

Mae'r gaer bentir yn eiddo i'r Ymddiriedolaeth Genedlaethol ac yn cael ei rheoli gan Barc Cenedlaethol Arfordir Penfro. Mae wedi'i gwarchod oherwydd ei harchaeoleg gan Cadw ac oherwydd ei bywyd gwyllt a'i hadar nythu gan Gyfoeth Naturiol Cymru. Mae Tîm CHERISH wedi bod yn brysur yn cynnal arolygon newydd ar y gaer bentir yn ystod y blynyddoedd diwethaf, gan gynnwys arolwg geoffisegol, ffotogrametreg UAV ac arolwg topograffig i gofnodi'r gwrthgloddiau archaeolegol. Mae hyn yn golygu bod gennym fodel 3D manwl gywir o'r pentir cyfan o fewn ychydig gentimetrau. Gallwch weld ein model SketchFab 3D o'r heneb yma: <http://cherishproject.eu/en/resources/3d-models/caerfai-camp-3d/>.

Oherwydd y bygythiadau niferus i'r safle hynod warchodedig hwn, rhoddwyd caniatâd i gynnal cloddio cymunedol. Buom yn ffodus o gael cydweithrediad llawn perchennog y pentir cyfagos, Rob Griffiths, ar gyfer mynediad i'r safle cloddio ac ar gyfer sefydlu'r pencadlys cloddio. Buom yn gweithio'n agos hefyd gydag archaeolegwyr o'r Parc Cenedlaethol, yr Ymddiriedolaeth Genedlaethol a Cadw i sicrhau bod y cloddio'n bodloni ei holl amcanion.

Dechreuodd y gwaith cloddio am bythefnos gan DigVentures ar 2 Medi 2021 a pharhaodd tan 18 Medi. Agorwyd dwy brif ffos uwch ben y gaer bentir nad oedd wedi'i harchwilio. Roedd Ffos 1 yn edrych ar du mewn y gaer sy'n erydu gyda ffos fawr dair ochr wedi'i hagog yn ddigon pell o ymyl y clogwyn. Y nod oedd edrych ar anomaledau wedi'u claddu a ddaeth i'r amlwg yn yr arolwg geoffisegol cynharach. Roedd Ffos 2 yn hir ac yn gul, wedi'i hagog drwy ragfuriau canolog yr amddiffynfeydd pentir i edrych ar y tyllau cwningod a threiddiad y gwreiddiau. Hefyd agorodd y gwirfoddolwyr nifer o 'byllau prawf', ffosydd bach metr sgwâr yn nhu mewn ehangach y pentir i weld pa archaeoleg oedd oddi tanodd. Gan nad oedd mynediad yn bosib i beiriant cloddio mecanyddol ar y safle, roedd rhaid cloddio pob tywarchen a phob rhawiad o bridd gyda llaw, a'u haillosod gyda llaw hefyd.

which defend the promontory have different threats; extensive rabbit warrens and the deep roots of bracken and blackthorn are damaging buried archaeological remains.

The promontory fort is owned by the National Trust and managed by the Pembrokeshire Coast National Park. It is protected for its archaeology by Cadw and for its wildlife and nesting birds by Natural Resources Wales. The CHERISH Team have been busy carrying out new surveys at the promontory fort in recent years, including geophysical survey, UAV photogrammetry and topographic survey to record the archaeological earthworks. This means we have a detailed 3D model of the entire headland accurate to within a few centimetres, you can view our 3D SketchFab model of the monument here: <http://cherishproject.eu/en/resources/3d-models/caerfai-camp-3d/>.

Because of multiple threats to this highly protected site, permission was given to carry out a community excavation. We were lucky to have the full cooperation of the owner of the neighbouring headland, Rob Griffiths, for access to and from the excavation and for setting up the dig HQ. We also worked closely with archaeologists from the National Park, National Trust and Cadw to ensure the dig met all its objectives.

The two-week excavation by DigVentures began on 2 September 2021 and ran until the 18 September. Two main trenches were opened over the unexplored promontory fort. Trench 1 looked at the eroding interior of the fort with a large three-sided trench opened at a safe distance from the cliff edge. It was designed to look at buried anomalies which showed up on the earlier geophysical survey. Trench 2 was long and narrow, opened through the central ramparts of the promontory defences to examine rabbit burrowing and root penetration. Volunteers also opened a number of 'test pits', small trenches a metre square in the wider interior of the headland to see what archaeology lay beneath. As there was no access for a mechanical digger on site, every single turf and shovel-full of soil had to be dug and replaced by hand.



Yr archaeoleg gynhanesyddol sy'n cael ei datgelu yn Ffos 1. Tyllau pyst adeiladau o amgylch llawr o gerrig llorio a dyddodiad caregog dwfn o hen ragfur/teras posibl ychydig y tu mewn i brif borth y gaer.

The prehistoric archaeology being revealed in Trench 1. Postholes of buildings around a stone-flagged floor and a deep stony deposit of a possible former rampart/terrace just inside the main gate of the fort.

Un flaenoriaeth wirioneddol ar gyfer y cloddio oedd cynnwys y gymuned leol gymaint â phosibl. Er bod COVID 19 yn golygu bod rhaid rhoi protocolau diogelwch llymach ar waith, mae DigVentures yn arbenigwyr ar ddenu pobl leol a'r rhai sy'n newydd i archaeoleg i gloddio. Daeth rhai am ddiwrnod prawf ac aros am wythnos. Teithiodd eraill filltiroedd lawer i weithio ym mhob tywydd.

A real priority for the excavation was to involve the local community as far as possible. Although COVID 19 meant more stringent safety protocols had to be put in place, DigVentures are experts in attracting local people and those new to archaeology to work on their digs. Some came for a trial day and stayed for a week. Others came many miles to work in all weathers.



*Cloddwyr hapus!
Happy diggers!*



Yn ystod pythefnos yn unig o gloddio mewn tywydd braf ddiwedd yr haf, dechreuodd Caerfai ddatgelu ei chyfrinachau. Datgelodd Ffos 1 dyllau pyst cynhanesyddol adeiladau o amgylch llawr o gerrig llorio a dyddodiad caregog dwfn o hen ragfur posibl ychydig y tu mewn i'r porth. Darganfuwyd olion bywyd o'r Oes Haearn hefyd; darnau prin o grochenwaith cynhanesyddol, 'chwerfannau gwerthyd' (disgiau tylllog o garreg neu glai pob a ddefnyddiwyd i dynnu edafedd o wlân), pwysau gwŷdd ar gyfer gwehyddu, arfau carreg a cherrig hogi ar gyfer gweithio lledr a metel, asgwrn dynol neu anifail wedi'i amlosgi, ac – yn hollbwysig – tystiolaeth o waith metel ar ffurf slag haearn ac efydd.

Over just two weeks of excavation in beautiful late summer weather, Caerfai began to reveal its secrets. Trench 1 revealed prehistoric postholes of buildings around a stone-flagged floor and a deep stony deposit of a possible former rampart just inside the gate. Traces of Iron Age life were also discovered; rare fragments of prehistoric pottery, 'spindle-whorls' (perforated discs of stone or baked clay used to draw out yarn from wool), loom-weights for weaving, stone tools and whetstones for working leather and metal, cremated human or animal bone, and – crucially – evidence for metalworking in the form of iron and bronze slag.



Darganfyddiadau'r dydd gyda'u darganfyddwyr. Chwerfan gwerthyd (chwith) a thystiolaeth o waith metel ar ffurf slag haearn ac efydd.

Finds of the day with their finders. A spindle-whorl (left) and evidence for metalworking in the form of iron and bronze slag.

Un o'r darganfyddiadau mwyaf cyffredin oedd cerrig tafl, sef cerrig traeth crwn neu hirgrwn bach wedi'u gwasgaru ar hyd a lled y gaer. Y rhain oedd yr arf mwyaf cyffredin yn yr Oes Haearn i atal ymosodiad. Gallai carreg dafl wedi'i hanelu'n fedrus dorri penglog ar 60m. Yn ddiddorol, ni ddarganfuwyd unrhyw grochenwaith Rhufeinig. Mae deiliadaeth o'r cyfnod Rhufeinig yn eithaf cyffredin yn y ceirydd pentir hyn ac mae crochenwaith Rhufeinig yn wydn ac yn hawdd dod o hyd iddo. Mae'n bosibl i'r gaer gael ei gadael yn wag ar drothwy concwest y Rhufeiniaid yng Nghymru.

One of the most common finds were sling-shot, small round or oval beach stones scattered throughout the fort. These were the most common weapon in the Iron Age to fend off attack. A skilfully aimed slingshot could fracture a skull at 60m. Interestingly no Roman pottery was discovered. Roman-period occupation is quite common at these promontory forts and Roman pottery is durable and easily found. It may be that the fort was abandoned on the eve of the Roman conquest of Wales.

Roedd angen llawer o gloddio gyda llaw ar y rhan drwy'r rhagfuriau, ond datgelodd hanes adeiladu rhagfur o glawdd clai a phridd cynnar, ac amddiffynfeydd diweddarach gyda waliau cerrig o'u blaen. Roedd y ffos hon yn ateb ei hamcanion rheoli hefyd drwy ddangos bod tyllau cwningod wedi treiddio o leiaf fetr i lawr i'r rhagfuriau, a gwreiddiau rhedyn bron i hanner metr!

The section through the ramparts required a lot of digging by hand, but it revealed the history of rampart construction from an early clay and earth bank, to later defences fronted by stone walls. This trench also answered its management objectives by demonstrating that rabbit holes had penetrated at least a metre down into the ramparts, and bracken roots nearly half a metre!



Datgelodd Ffos 2 ar draws amddiffynfeydd y gaer hanes adeiladu rhagfur o glawdd clai a phridd cynnar, ac amddiffynfeydd diweddarach gyda waliau cerrig o'u blaen.

Trench 2 across the forts defences revealed the history of rampart construction from an early clay and earth bank, to later defences fronted by stone walls.

Yn ystod y gwaith cloddio croesawyd llif cyson o ymwelwyr, gan gynnwys y criw o *Coast and Country* ar ITV a dreuliodd ddiwrnod ar y safle yn ffilmio pecyn hir am y gwaith cloddio.

I gael rhagor o wybodaeth am y gwaith cloddio, gan gynnwys cipolwg yn ôl ar yr holl gamau o ddydd i ddydd, edrychwch ar dudalen prosiect Caefai ar wefan DigVentures sydd ar gael yma: <https://digventures.com/projects/caerfai-promontory-fort/>

During the dig we welcomed a steady stream of visitors including the crew from ITV's *Coast and Country* who spent a day on site filming a long feature about the excavation.

For more information on the excavation, including a look back at all the day-to-day action take a look at the Caefai project page on the DigVentures website available here: <https://digventures.com/projects/caerfai-promontory-fort/>

DEIFIO AT Y BRONZE BELL / DIVING THE BRONZE BELL



Barod am brysurdeb! Dau o dîm deifio'r Bronze Bell o MSDS Marine.

Ready for action! Two of the Bronze Bell dive team from MSDS Marine.

Ym mis Medi 2021 roedd yr haul yn tywynnu'n ddisglair ar gyfer digwyddiad deifio cyntaf CHERISH at longddrylliad – cyfle i blymio i'r dyfnderoedd oddi ar Benrhyn Llŷn i ymweld â'r Bronze Bell sydd dan warchodaeth. Llong gargo Ffrengig yw hon yn dyddio i'r 1600au a suddodd ar rîff Sarn Padrig, ychydig oddi ar yr arfordir o Bwllheli, yn cario marmor Carrara o Tuscany. Roedd y llongddrylliad wedi cael ei arolygu gan dîm CHERISH o Arolwg Daearegol Iwerddon o fwrdd yr RV Keary ym mis Medi 2020. Ond dyma gyfle i fynd yn agos iawn at y llongddrylliad o dan y tonnau.

Mae'r llongddrylliad yn gorwedd mewn 10 metr o ddŵr ac felly roedd gan y deifwyr ychydig llai na 5 awr o amser deifio bob dydd. Deifiwyd ati ddiwethaf yn 2004, felly byddai deifio o'r newydd yn ein galluogi i gymharu canlyniadau a nodi newid. Comisiynwyd MSDS Marine gan CHERISH i ymgymryd â'r gwaith deifio, a thros gyfnod o 5 diwrnod ym mis Medi cwblhawyd arolwg trylwyr o'r safle a oedd yn cynnwys ffotograffau a fideo manwl.

In September 2021 the sun shone brightly for our first CHERISH wreck dive – plunging the depths off the Llŷn Peninsula to visit the protected Bronze Bell, a French cargo ship dating to the 1600s that sunk on the Sarn Padrig reef, just off the coast from Pwllheli, carrying Carrara marble from Tuscany. The wreck had been surveyed by the CHERISH team from the Geological Survey Ireland from onboard the RV Keary in September 2020. But here was a chance to get up close and personal with the wreck under the waves.

The wreck lies in 10 metres of water allowing the divers just under 5 hours of diving each day. It was last dived in 2004, so a new dive would enable us to compare results and identify change. MSDS Marine were commissioned by CHERISH to undertake the dive, and over 5 days in September completed a thorough survey of the site which included detailed photography and video.

Paratoi i ddeifio.
Getting ready to dive.



Daeth MSDS Marine â'u trelar allgymorth 'The Heritage Hive' i farina Pwllheli yn ystod y deifio, er mwyn i aelodau'r cyhoedd gael gwybod mwy am y Bronze Bell a'r gwaith sy'n cael ei wneud. Buont hefyd yn ymweld ag Ysgol Gynradd leol Abererch i siarad am y Bronze Bell, archaeoleg danddwr a CHERISH. Gofynnwyd LLAWER o gwestiynau a mwynhaodd plant yr ysgol roi cynnig ar yr offer deifio.

Denodd y deifio ddiddordeb gan deledu cenedlaethol hefyd a bu Newyddion Channel 4 yn cyfwrdd y tîm ar gyfer adroddiad arbennig ar newid yn yr hinsawdd ar y newyddion gyda'r nos. Mae'r stori i'w gweld yma <https://youtu.be/x1HgNtVKEss> ac mae'n ein hatgoffa o'r tywydd godidog gafodd y tîm.

Ar y cyfan, roedd digwyddiad deifio cyntaf CHERISH at longddrylliad yn llwyddiant mawr, gyda diolch enfawr i MSDS Marine. Oherwydd y tywydd da roedd modd i'r deifio ddigwydd ar bedwar allan o'r pum diwrnod, tynnwyd mwy na 7500 o luniau a chasglwyd ffotogrametreg ar draws rhan helaeth o safle'r llongddrylliad, tua 46 x 30 metr. Mae'r holl ddata bellach yn cael eu prosesu a disgwylir adroddiadau yn ystod Gwanwyn 2022.

Roedd y deifio yn destun sgwrs ar-lein fel rhan o gyfres o ddarlithoedd y Comisiwn Brenhinol ddydd lau 17 Chwefror gan Alison James o MSDS Marine ar ran CHERISH. Mae'r sgwrs ar gael i'w gwyllo ar sianel YouTube CHERISH.

Gallwch ail-fyw'r deifio drwy ddyddiaduron fideo dyddiol sydd ar gael ar ein sianel YouTube yma <https://youtube.com/playlist?list=PL3awNDJNynsOzgJRrKqVW-kZ0YJDkSKOp>

Rhoddodd Podlediad y Mariner's Mirror sylw i stori'r llongddrylliad a'r deifio hefyd a gellir gwrandio yma: <https://snr.org.uk/the-mariners-mirror-podcast/the-maritime-history-of-wales-3-the-bronze-bell-wreck/>

MSDS Marine brought their outreach trailer 'The Heritage Hive' to Pwllheli marina during the course of the dive, so that members of the public could find out more about the Bronze Bell and work being undertaken. They also visited a local primary school Ysgol Gynradd Abererch to talk about the Bronze Bell, underwater archaeology and CHERISH. LOTS of questions were asked and the school children enjoyed trying on the diving equipment.

The dive also garnered interest from national TV and Channel 4 News interviewed the team for a climate change special report on the evening news. The feature can be found here <https://youtu.be/x1HgNtVKEss> and is a reminder of the spectacular weather that the team experienced.

All in all, the first CHERISH wreck dive was a great success, with huge thanks to MSDS Marine. The weather allowed diving to take place on four out of five days, over 7500 images were taken and photogrammetry gathered across substantial area of the wreck site, some 46 x 30 metres. All the data is now being processed with reports due in Spring 2022.

The dive was the subject of an online talk as part of the Royal Commission's lecture series on Thursday 17 February by Alison James from MSDS Marine on behalf of CHERISH. The talk is available to view on the CHERISH YouTube channel.

You can relive the dive through daily video dive diaries available on our YouTube channel here <https://youtube.com/playlist?list=PL3awNDJNynsOzgJRrKqVW-kZ0YJDkSKOp>

The Mariner's Mirror Podcast also profiled the story of the wreck and the dive and can be listened to here: <https://snr.org.uk/the-mariners-mirror-podcast/the-maritime-history-of-wales-3-the-bronze-bell-wreck/>

CYFARFOD Â THÎM CHERISH / MEET THE CHERISH TEAM

Toby Driver, Comisiwn Brenhinol

Fi yw Uwch Ymchwilydd yr Arolygon Awyr yn y Comisiwn Brenhinol ac rwy'n gweithio'n rhan amser ar brosiect CHERISH. Rwy'n gyfrifol am gynnal arolygon awyr gweithredol o ardaloedd prosiect CHERISH yng Nghymru ac Iwerddon, yn ogystal â gweithio gyda chydweithwyr CHERISH ar agweddau ar LiDAR yn yr awyr, arolygon drôn a gwaith archaeolegol ehangach.

Rydw i wedi gweithio ym maes archaeoleg ers y tro cyntaf i mi gloddio yn ystod fy mlwyddyn fwch yn nhref Rufeinig Caerwent yn 1990 ac nid yw fy mrwdfrydedd i dros y pwnc wedi pylu eto. Astudiais archaeoleg ym Mhrifysgol Southampton ac rydw i wedi bod yn ffodus i gwblhau gwaith cloddio yn ne Sbaen, Jersey ac ar rai prosiectau cloddio mawr wedi'u cyllido gan ddatblygwyr yn Lloegr. Ymunais â'r Comisiwn Brenhinol yn Aberystwyth yn 1995 i fapio archaeoleg o ffotograffau o'r awyr ac rydw i wedi bod yn rheoli rhaglen hedfan weithredol Cymru ers 1997.

Mae arolwg o'r awyr yn parhau i fod yn ffordd werthfawr o arolygu arfordiroedd yn gyflym, a monitro cyflwr cannoedd lawer o safleoedd. Gall hefyd ddarganfod henebion coll neu wedi'u claddu mewn cyfnodau estynedig o sychder a gall hyd yn oed gofnodi llongddrylliadau a thrapiau pysgod anhysbys drwy ddyfroedd bas y glannau. Mae uchafbwyntiau'r prosiect

Toby Driver, Royal Commission

I'm the Senior Investigator for Aerial Survey at the Royal Commission and work part-time on the CHERISH project. I'm responsible for active aerial survey of CHERISH project areas in Wales and Ireland, as well as working with CHERISH colleagues on aspects of airborne LiDAR, drone surveys and wider archaeological work.

I've worked in archaeology since my very first excavation during my gap year at Caerwent Roman town in 1990 and my enthusiasm for the subject hasn't waned yet. I studied archaeology at the University of Southampton and have been fortunate to work on excavations in southern Spain, Jersey and on some large developer-funded excavations in England. I joined the Royal Commission in Aberystwyth in 1995 to map archaeology from aerial photographs and have been managing the active flying programme for Wales since 1997.

Aerial survey remains a valuable way to rapidly survey coastlines and to monitor the condition of many hundreds of sites. It can also discover lost or buried monuments in prolonged droughts and can even document unknown wrecks and fishtraps through shallow inshore waters. Project highlights so far include flying over some stunning new (to me) landscapes, monuments and coastlines in eastern and



hyd yma’n cynnwys hedfan dros rai tirweddau trawiadol newydd (i mi), henebion ac arfordiroedd yn nwyrain a de lwerddon. Roedd hefyd yn wych cael helpu i redeg ysgol hyfforddi hedfan yn Nulyn yn 2019 gyda chydweithwyr o’r Rhaglen Ddarganfod a Historic England; ‘wna i fyth anghofio hedfan dros Newgrange a Bryn Tara.

Fy mhrif ddiddordebau ymchwil yw bryngeyrydd o’r Oes Haearn a thirweddau cynhanesyddol Cymru, y pwnc a ddewisais ar gyfer fy PhD. Rydw i wir yn mwynhau cyflwyno stori’r safleoedd anhygoel yma i gynulleidfa anacademaidd ehangach drwy lyfrau a sgysiau. Pan nad ydw i’n rhoi sylw i archaeoleg, rydw i fel rheol allan ar daith feicio hir ym mynyddoedd Cymru neu’n dringo mynydd.

Ffarwel a Helo!

Ar ddiwedd 2021, bu’n rhaid ffarwelio â dau o Dîm CHERISH, Dan Hunt o Gomisiwn Brenhinol Cymru a James Barry o Arolwg Daearegol Iwerddon. Diolch yn fawr iawn iddynt am eu holl waith caled ar y prosiect, dymunwn bob llwyddiant iddynt yn y dyfodol.

southern Ireland. It was also great to help run a flying training school in Dublin in 2019 with colleagues from the Discovery Programme and Historic England; I’ll never forget flying over Newgrange and the Hill of Tara.

My main research interests lie in the Iron Age hillforts and prehistoric landscapes of Wales, the topic I chose for my PhD. I really enjoy bringing the story of these incredible sites to a wider non-academic audience through books and talks. When I’m not doing archaeology, I’m usually out on a long cycle tour in the Welsh hills or climbing a mountain.

Goodbye and Hello!

At the end of 2021 we said a fond farewell to two of the CHERISH Team, Dan Hunt from the Royal Commission in Wales and James Barry from Geological Survey Ireland. Huge thanks to them for all their hard work on the project, we wish them every success in the future.



Hannah Genders Boyd

Hoffem groesawu Hannah Genders Boyd a Rachael Garside i deulu CHERISH. Maent wedi ymuno â thîm y Comisiwn Brenhinol. Hannah yw ein Cynorthwy-ydd Data Digidol ac Arolygon newydd ac mae’n ymuno â ni o waith cloddio gyda Historic England yn Richborough yng Nghaint. Yn ddiweddar mae hi wedi cwblhau gradd Meistr mewn Archaeoleg a Phalaeoecoleg gyda Phrifysgol yr Uchelddiroedd a’r Ynysoedd, a oedd yn cynnwys gweithio gyda chymunedau Gaeleg yn Skye i archwilio eu treftadaeth. Bu hefyd yn gweithio am flwyddyn fel Intern Newid Hinsawdd gyda Historic Environment Scotland.

Rachael Garside yw ein Rheolwr Cysylltiadau Cyhoeddus a Marchnata newydd ac mae’n ymuno â ni o BBC Cymru Wales lle bu’n Uwch Ohebydd Darlledu a chyn hynny’n gyflwynydd ar raglenni Good Morning Wales a Country Focus, yn ogystal â swyddi blaenorol yn cyflwyno Ffermio ar S4C.

We’d like to welcome to the CHERISH family Hannah Genders Boyd and Rachael Garside who have joined the team from the Royal Commission. Hannah is our new Digital Data and Survey Assistant and joins us from excavations with Historic England at Richborough in Kent. She has recently completed a Masters in Archaeology and Palaeoecology with the University of Highlands and Islands, which included working with Gaelic communities on Skye to explore their heritage. She also worked for a year as a Climate Change Intern with Historic Environment Scotland.

Rachael Garside is our new PR and Marketing Manager and joins us from BBC Cymru Wales where she has been a Senior Broadcast Reporter and previously a presenter on the Good Morning Wales and Country Focus programmes, as well as previous roles presenting Ffermio on S4C.



Rachael Garside



Dan Hunt (chwith) a James Barry (dde)
Dan Hunt (left) and James Barry (right)





Puffty yn goruchwyllo'r cloddio
yng Nghaer Bentir Caerfai!
Puffty supervising excavations
at Caerfai promontory Fort!

FFEIL FFEITHIAU PUFFTY / PUFFTY'S FACT FILE



Mae masgot CHERISH ac aelod o'r tîm, Puffty-Hump, wedi mwynhau cyfnod prysur yn y maes yn ystod y chwe mis diwethaf, mae hi'n arbennig o hoff o gloddio! Ar ei theithiau mae'n casglu ffeithiau a ffigurau diddorol am newid hinsawdd, treftadaeth arfordirol a'n prosiect ni. Oeddech chi'n gwybod...

Ar 17 Ionawr 2022, cyhoeddodd Llywodraeth y DU Aseiad Risg Newid Hinsawdd 2022 y DU. Mae'r adroddiad hwn yn amlinellu safbwynt llywodraeth y DU a'r gweinyddiaethau datganoledig ar y risgiau newid yn yr hinsawdd allweddol a'r cyfleoedd mae'r DU yn eu hwynebu heddiw. Mae'n seiliedig ar yr Aseiad Annibynnol o Risgiau Hinsawdd y DU, sef y cyngor statudol a ddarperir gan y Pwyllgor Newid Hinsawdd (<https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2022>)

'Fel archaeolegydd, 'fyddwch chi byth yn gyfoethog, dydych chi ddim yn debygol o fod yn enwog, ond fe allwch chi helpu i achub y blaned' – dyma eiriau Dr Hannah Fluck, Pennaeth y Strategaeth Amgylcheddol yn Historic England, yn ei llythyr at archaeolegydd ifanc. Darllenwch y llythyr gwyh sy'n amlinellu pam mae archaeoleg mor bwysig ar gyfer dyfodol cynaliadwy yma <https://www.archaeologyuk.org/resource/letter-to-a-young-archaeologist-january-2022.html>

Yn anterth y cyfnod rhewlifol diwethaf tua 22,000 o flynyddoedd yn ôl, cafodd llawer iawn o ddŵr ei gloi yn yr haenau iâ enfawr a oedd yn gorchuddio llawer o hemisffer y gogledd. Amcangyfrifir y gallai lefel y môr fod wedi bod dros 75 metr yn is nag y mae heddiw.

Mae newid yn yr hinsawdd yn effeithio ar nodweddion ffisegol moroedd a chefnforoedd. Mae arsylwi hirdymor o foroedd y DU a'r cefnforoedd cyfagos yn dangos aer a môr yn cynhesu, colli iâ'r môr, asideiddio cefnforoedd a chynnydd yn lefel y môr (cerdyn adrodd MCCIP 2020 <http://archive.mccip.org.uk/impacts-report-cards/full-report-cards/2020/>)

Cynhaliwyd un o'r arolygon UAV mwyaf gan Dîm CHERISH Cymru ym mis Awst 2020 ac roedd yn cynnwys 1 cilometr o arfordir yn ne Sir Benfro rhwng ceyrydd pentir arfordirol Trefflemin a Crocksydam. Mae'r model 3D ffotogrametrig o'r arfordir o ganlyniad yn cynnwys 1869 o ffotograffau unigol o'r awyr.

CHERISH mascot and team member Puffty-Hump has enjoyed a busy time in the field over the past six months, she's particularly fond of digging! On her travels she gathers interesting facts and figures about climate change, coastal heritage and our project. Did you know...

On 17 January 2022 UK Government published the UK Climate Change Risk Assessment 2022. This report outlines the UK government and devolved administrations' position on the key climate change risks and opportunities that the UK faces today. It is based on the Independent Assessment of UK Climate Risk, the statutory advice provided by the Climate Change Committee (<https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2022>)

'As an archaeologist you won't be rich, you are unlikely to be famous, but you can help to save the planet' so writes Dr Hannah Fluck, Head of Environmental Strategy at Historic England in her letter to a young archaeologist. Read the wonderful letter outlining why archaeology is so important for a sustainable future here <https://www.archaeologyuk.org/resource/letter-to-a-young-archaeologist-january-2022.html>

At the height of the last glacial episode around 22,000 years ago, vast amounts of water were locked up in the huge ice sheets covering much of the norther hemisphere. It's estimated that sea-levels may have been over 75 metres lower than they are today.

Climate change affects the physical characteristics of seas and oceans. Long-term observations of UK seas and surrounding oceans show air and sea warming, sea-ice loss, ocean acidification and sea-level rise (MCCIP report card 2020 <http://archive.mccip.org.uk/impacts-report-cards/full-report-cards/2020/>)

One of the largest UAV surveys flown by the Welsh CHERISH Team was in August 2020 and covered 1 kilometre of coastline in south Pembrokeshire between Flimston and Crocksydam coastal promontory forts. The resulting photogrammetric 3D model of the coastline is made up of 1869 individual aerial photographs.

DYDDIADAU AR GYFER EICH DYDDIADUR

Mae **arddangosfa CHERISH** yn parhau i deithio ac yn ystod y misoedd nesaf gellir ei gweld yn y lleoliadau canlynol:

Oriel y Parc, Tyddewi, Sir Benfro: **11 Ionawr – 27 Chwefror 2022**

Llyfrgell Arklow, Prif Stryd, Arklow, Swydd Wicklow: **1 – 28 Chwefror 2022**

Llyfrgell Waterford, Lady Lane, Dinas Waterford: **14 Mawrth – 27 Mawrth 2022**

Senedd Cymru, Caerdydd: **28 Mai – 14 Gorffennaf 2022**

Sgyrsiau i ddod sy'n agored i bawb:

28 Chwefror 2022: Newid hinsawdd ac archaeoleg – ymchwiliadau i geyrydd pentir sy'n erydu ar yr Arfordir Copr gan Edward Pollard (Rhaglen Ddarganfod) ar gyfer Cymdeithas Archaeolegol a Hanesyddol Waterford

5 Mawrth 2022: Cysylltu Treftadaeth Arfordirol, Cymunedau a Newid Hinsawdd gan Anthony Corns (Rhaglen Ddarganfod) Cynhadledd Flynyddol CITIZAN, Lerpwl (<https://citizan.org.uk/events/2022/Mar/05/citizan-conference-connecting-coastal-heritage-communities-and-climate-change/>)

16 Mawrth 2022: Ymchwilio i effeithiau newid yn yr hinsawdd ar dreftadaeth arfordirol yng Nghymru ac Iwerddon – safbwyntiau palaeoamgylcheddol o brosiect CHERISH gan yr Athro Sarah Davies (Prifysgol Aberystwyth) ar gyfer Cyfres Darlithoedd Ymchwil Peryglon, Risg a Thrychinebau Sba Caerfaddon (<https://www.bathspa.ac.uk/research-and-enterprise/research-centres/hazard-risk-and-disaster-research-group/events/>)

22 Mawrth 2022: Sgwrs amser cinio ar-lein i gyd-fynd ar gyfer Prosiect CHERISH: Arddangosfa Newid Hinsawdd a Threftadaeth Arfordirol yn Llyfrgell Ganolog Waterford a Chanolfan Wybodaeth Europe Direct gan Edward Pollard (Rhaglen Ddarganfod)

Mae lleoliadau arddangosfa a sggyrsiau newydd yn cael eu hychwanegu at ein dyddiadur drwy'r amser, felly cadwch lygad ar ein gwefan a'n sianeli cyfryngau cymdeithasol am yr wybodaeth a'r dyddiadau diweddaraf.

DATES FOR YOUR DIARY

The **CHERISH exhibition** continues to travel, and over the coming months can be found at the following venues:

Oriel y Parc, St David's, Pembrokeshire: **11 January – 27 February 2022**

Arklow Library, Main Street, Arklow, County Wicklow: **1 – 28 February 2022**

Waterford Library, Lady Lane, Waterford City: **14 March – 27 March 2022**

Senedd Cymru–Welsh Parliament, Cardiff: **28 May – 14 July 2022**

Upcoming talks open to all:

28 February 2022: Climate change and archaeology – investigations of the Copper Coast's eroding promontory forts by Edward Pollard (Discovery Programme) for Waterford Archaeological and Historical Society

5 March 2022: Connecting Coastal Heritage, Communities and Climate Change by Anthony Corns (Discovery Programme) the CITIZAN Annual Conference, Liverpool (<https://citizan.org.uk/events/2022/Mar/05/citizan-conference-connecting-coastal-heritage-communities-and-climate-change/>)

16 March 2022: Investigating climate change impacts on coastal heritage in Ireland and Wales – palaeoenvironmental perspectives from the CHERISH project by Prof Sarah Davies (Aberystwyth University) for Bath Spa Hazard, Risk and Disaster Research Lecture Series (<https://www.bathspa.ac.uk/research-and-enterprise/research-centres/hazard-risk-and-disaster-research-group/events/>)

22 March 2022: Accompanying online lunchtime talk for the CHERISH Project: Climate Change and Coastal Heritage Exhibition at Waterford Central Library and Europe Direct Information Centre by Edward Pollard (Discovery Programme)

New exhibition venues and talks are being added to our diary all the time, so please keep an eye on our website and social media channels for the latest information and dates.



CHERISH

Newid Hinsawdd a Threftadaeth yr Arfordir
Climate Change and Coastal Heritage
Athrú Aeráide agus Oidhreacht Chultúrtha

CADWCH MEWN CYSYLLTIAD / KEEP IN TOUCH:

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<https://www.youtube.com/channel/UCADLx1hyYL-3VO5xQoqzVsw>



www.cherishproject.eu



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