

AN ANALYTICAL STUDY OF OPEN ACCESS JOURNALS IN ZOOLOGY ON DOAJ

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ABSTRACT

The present study has investigated the trends of open access journals appeared in the Directory of Open Access Journals (DOAJ). It provides an insight to the open access publishing in the field of Zoology based on the data collected from DOAJ; it has listed about 10,071 journals across 136 countries till November 2014. Out of 10,071 journals, only 94 journals are listed under Zoology, in 153 journals 94 journals are free of charges. The data was extracted in Microsoft excel format and analyzed based on subject, Publisher, languages and country.

KEYWORDS: Open Access Journals; Zoology; DOAJ; Open Access; Analytical study

The advent of the internet has reduced our earth and attained as a global village [1]. Open access is a huge achievement of the internet which increased the information accessibility globally. It has improved all the regions of society, including researchers, scholars and institutions. Open access electronic journals can play a vital role in academic institutions as journal subscription costs are increasing with little increase in library budgets [2]. Open-access literature is digital, online, free of charge, free of copyright and licensing restrictions [3]. IFLA (2011) [4] states that “Open access is the now known name for a concept, a movement and a business model whose goal is to provide free access and re-use of scientific knowledge in the form of research articles, monographs, data, and related materials.” Open access to literature is key for providing universal access to information and knowledge [5]. Open access is a set of principles and a range of practices through which research outputs are distributed online and free of cost [6]. Open access journal and open access archives are very essential tools to disseminate the scholarly communication among the users. Open access promotes wider accessibility of research outputs of authors [7]. The Directory of Open Access Journals (DOAJ) is a service platform to listing scientific and open access journals throughout the world [8]. The Directory defines open access journals as 'Journals that use a funding model that does not charge readers or their

institutions for access' [9]. Budapest Open Access Initiative[10] characterizes the open-access as 'free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The DOAJ was launched in 2003 at Lund University, Sweden, with 300 open access journals. Today, the independent database contains more than 15,000 open access journals covering all areas of science, technology, medicine, social sciences and humanities [11].

INTRODUCTION:

Open-access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions. What make it possible are the internet and the consent of the author or copyright-holder. OA is entirely compatible with peer review, and all the major OA initiatives for scientific and scholarly literature insist on its importance. Just as authors of journal articles donate their labor, so do most journal editors and referees participating in peer review. OA literature is not free to produce, even if it is less expensive to produce than conventionally published literature. The question is not whether scholarly literature can be made costless, but whether there are better ways to pay the bills than by charging readers and creating access barriers. Business models for paying the bills depend on how OA is delivered (<http://www.earlham.edu/~peters/fos/brief.htm>).

DOAJ (Directory of Open Access Journals)

The initiative to start the project Directory of Open Access Journals (DOAJ) was taken in 2002 at the first Nordic Conference on Scholarly Communication (NCSC). The idea was to develop a one stop shop service which made it easier for libraries and aggregators to integrate OA- in their services, for OA-publishers to get their journals Visible and for readers to find OA-material. Initially Open Society Institute and SPARC funded the project which was launched in 2003 containing around 300 journals. Today, the Directory has become the authoritative source for open access journals, with close to 3800 journals in the Directory and over 200 000 searchable articles. In this article we will tell you more about how the service is operated, its current status and some plans for the future.

What is DOAJ?

- Directory of Open Access Journals (DOAJ) is a service listing scientific, quality controlled, full text open

- Access journals. The aim of the directory is to increase the Visibility and ease of use of open access journals
- Promoting their increased usage and impact. **(Johansson & Wahlgren, 2004)**

REVIEW OF LITERATURE:

Open Access literature productivity of Physics : A DOAJ, under the category Physics, there are twelve divisions in which journals in general physics possess top position and only a small number of journals are in the subject category Mechanics along with Mathematics, Chemistry and Technology. Country-wise analysis indicates that among 38 countries, who contributed journals in DOAJ in Physics subject, USA is the top most country and second position is for Egypt. There are only 5 journals in Physics category published from India and possess 6th position only. All the journals from India in Physics subjects are in English language. Among the 153 journals, 30 journals are published in multiple languages. Most of the publishers contribute single journal while only a few publishers contribute more journals in DOAJ. Learned Societies contribute more in Open Access in Physics subject which is followed by commercial publishers and universities. In DOAJ under the subject category physics only 5 journals had changed their titles till date which is comparatively less. Some of the publishers charge fee from author mainly for meeting the expenses of editing, reviewing and to maintain the archive which is then made open to the public **(Aswathy & Gopikuttan, 2013)**.

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(Nisha & Ahmed, 2014) They investigated the trends of open access journals appeared in the Directory of Open Access Journals (DOAJ). It provides an insight to the open access publishing in the field of chemistry based on the data collected from DOAJ. Notably, it has listed about 9804 journals across 124 countries till 8th January 2014. Out of 9804 journals, 164 (1.67%) journals are listed under Chemistry. It was found that out of 164 journals from chemistry, majority of the open access journals belong to the category chemistry general and contribute some about 68.9% of the total chemistry journals in DOAJ. Though the maximum growth of these journals has been recorded in the decade 2000s, however in 2011, a record number of 30 journals of Chemistry appeared in DOAJ. Interestingly, India contributed 24 OA journals and is placed second after Egypt in publishing OA journals in chemistry. Further, it has been found that commercial publishers with 29 journals are the major contributors to OA in DOAJ with Hindawi Publishing Corporation as the leading contributor. Moreover, English has been found as the most popular language of OA journals. While as Indian Academy of Sciences: Chemical Sciences is reported to be the oldest journal publishing since 2005.

(Solomon & Björk) studied the APCs charged and article volumes of journals that were listed in the Directory of Open Access Journals as charging APCs. These included 1,370 journals that published 100,697 articles in 2010. The average APC was 906 US Dollars (USD) calculated over journals and 904 US Dollars USD calculated over articles. The price range Varied between 8 and 3,900 USD, with the lowest prices charged by journals published in developing countries and the highest by journals with high impact factors from major international publishers. Journals in Biomedicine represent 59% of the sample and 58% of the total article Volume. They also had the highest APCs of any discipline. Professionally published journals, both for profit and nonprofit had substantially higher APCs than society, university or scholar/researcher published journals. These price estimates are lower than some previous studies of OA publishing and much lower than is generally charged by subscription publishers making individual articles open access in what are termed hybrid journals.

(Jöttkandt, 2010) conducted a large-scale survey of US library holdings to determine the extent that records of journals from the Directory of Open Access Journals are held by World Cat-affiliated Academic libraries. It then followed up with a questionnaire inquiring into the attitudes and practices of librarians from 100 libraries that were ranked highest out of the total population in terms of their holdings of DOAJ journals. The main objective of the study was to develop a better understanding of the factors influencing the incorporation of OA materials into a university library’s holdings, where and by what means they typically appear on library websites, and how librarians feel about having these materials in their collections. Our findings suggest that the majority (54%) of World Cat-affiliated US academic libraries have at least one record for a DOAJ journal in their holdings. It additionally suggests

that librarians from institutions holding high numbers of DOAJ records generally have Very positive attitudes towards OA, even though most of the respondents from these institutions were largely unaware that their holdings were more heavily weighted towards DOAJ records than at comparable institutions. Regarding library selection of OA titles, a journal’s subject matter was highlighted as a more important consideration than its access model. Additional findings suggest that large publishers of OA journals tend to have a higher representation in library holdings than smaller independent publishers. The study should assist open access publishers in understanding library policies concerning OA materials and help them to develop effective strategies for increasing the uptake of their titles in library holdings. This may have the benefit of bringing OA titles to a greater awareness and acceptance within the research community at large.

OBJECTIVE OF STUDY:

1. To enumerate the free E- Journals on Zoology on DOAJ.
2. To know the country wise distributing E-Journals on Zoology on DOAJ.
3. To find out the language wise distribution of E- Journals on Zoology on DOAJ.
4. To know the usefulness of applicability of Zoology E-Journals to other disciplines.
5. To know the structure and content of DOAJ
6. To study the Mail Domain of Zoology E-Journals on DOAJ.
7. To know the Distributing Subject Keyword of Zoology E-Journals on DOAJ.

METHODOLOGY:

In order to have an in-depth study, the investigators found survey method suitable to analyses the growth and status of open access Zoology journals. To fulfill the objectives laid down above, the data was collected from online directory of open access journals i.e. DOAJ. Notably, the directory till November 23, 2014 has listed 10,071 journals across 136 countries; however in the present study only free Journals in Zoology were undertaken which 153 journals are listed under the subject “Zoology”. In that 94 journals are no charges and 51 journals are have charges. The data were extracted/ imported from the website in SPSS software and analysis was carried out on the basis of different parameters subject of e-journals, country of publishing, publisher, language, keywords of e-Journals and Started publishing in DOAJ.

SCOPE & LIMITATIONS:

The study is limited to Zoology E-journals which is listed on Directory of Open Access Journals for the present paper DOAJ data is accessible till 23/11/2014. It is not possible to show all the subjects.

ANALYSIS AND INTERPRETATIONS:

Table No.01 Publisher-Wise E-journal

No	Title of journal	Publisher	ISSN/EI SSN	URL
01	ISRN Zoology	Hindawi Publishing Corporation	2090	http://www.isrn.com/journals/zoology/
02	North-Western Journal of Zoology	Univeristy of Oradea Publishing House	1584	http://biozoojournals.3x.ro/nwjz/index.html
03	Contributions to Zoology	Naturalis	1383	http://www.ctoz.nl
04	Alternative title: Dongwu Xuebao	Current Zoology	1674	http://www.currentzoology.org/
05	MalaCo	Association Caracol	1778	http://www.journal-malaco.fr/
06	Bonn Zoological Bulletin	Zoologisches Forschungsmuseum Alexander Koenig	2190	http://www.zfmk.de/web/Forschung/Buecher/Beitrag/index.en.html
07	Invertebrate Survival Journal	ISJ	1824	http://www.isj.unimo.it/
08	Malacologica Bohemoslovaca	Slovak Academy of Sciences	1336	http://mollusca.sav.sk/
09	The Raffles Bulletin of Zoology	National University of Singapore	217	http://lkcnhm.nus.edu.sg/nus/index.php/publications/rbz
10	Vestnik Zoologii	De Gruyter Open	2073	http://www.degruyter.com/view/j/vzoo
11	European Journal of Taxonomy	Consortium of European Natural History Museums	2118	http://www.europeanjournaloftaxonomy.eu/index.php/ejt
12	Ecotropicos	Universidad de Los Andes (Venezuela)	1012	http://www.saber.ula.ve/ecotropicos/
13	Slovak Raptor Journal	De Gruyter Open	1338	http://www.degruyter.com/view/j/srj
14	Fauna Norvegica	Norwegian University of Science and Technology	1891	http://www.ntnu.no/ojs/index.php/fauna_norvegica
15	Chiroptera Neotropical	Chiroptera Neotropical	1413	http://www.chiropteraneotropical.net/Home.html
16	Revue de Primatologie	Société Francophone de Primatologie	2077	http://primatologie.revues.org
17	Journal of	PAGEPress Publications	2279	http://www.jear.it

	Entomological and Acarological Research			
18	Ornitología Colombiana	Asociación Colombiana de Ornitología	1794	http://www.ornitologiacolombiana.org/revista.htm
19	Mollusca	Museum für Tierkunde, Dresden	1864	http://www.mollusca-journal.de
20	Acta Herpetologica	Firenze University Press	1827	http://www.fupress.net/index.php/ah/index
21	Phyllomedusa : Journal of Herpetology	University of São Paulo	1519	http://www.phyllomedusa.esalq.usp.br
22	Zoological Research	Chinese Academy of Sciences	254	http://www.bioline.org.br/zr
23	Boletín SAO	Sociedad Antioqueña de Ornitología (SAO)	123	http://www.sao.org.co/bol-etinsao.html
24	Biawak	International Varanid Interest Group	1936	http://varanidae.org/biawak
25	Zoologische Mededelingen	Naturalis	24	http://www.zoologischemededelingen.nl/
26	Ring	Versita	35	http://www.degruyter.com/view/j/ring
27	ZooNotes	Plovdiv University	1313	http://www.zoonotes.bio.uni-plovdiv.bg
28	Euscorpius	Marshall University	1536	http://www.science.marshall.edu/fet/euscorpius/
29	Ruthenica : Russian Malacological Journal	Ruthenica Publ.	136	http://www.ruthenica.com/
30	ISRN Entomology	Hindawi Publishing Corporation	2314	http://www.hindawi.com/isrn/entomology/
31	Arthropod Systematics & Phylogeny	Museum für Tierkunde, Dresden	1863	http://www.arthropod-systematics.de/
32	Opuscula Zoologica Instituti Zoosystematici et Oecologici Universitatis Budapestinensis	Eötvös Loránd University	237	http://opuscula.elte.hu/
33	Neotropical Helminthology	Association Parana de Helminthological e Invertebrates Afines	2218	http://sisbib.unmsm.edu.pe/BVRevistas/neohel/portada.htm
34	Cuadernos de Herpetología	Asociación Herpetológica Argentina	326	http://ppct.caicyt.gov.ar/index.php/cuadherpetol
35	Graellsia	Museo Nacional de Ciencias Naturales	367	http://graellsia.revistas.csic.es/index.php/graellsia/index
36	SHILAP Revista de Lepidopterología	Sociedad Hispano-Luso-Americana de Lepidopterología	300	http://www.redalyc.org/revista.oa?id=455
37	European Mosquito Bulletin	European Mosquito Control Association	1460	http://e-m-b.org/
38	Chironomus Newsletter	Norwegian University of	172	http://www.ub.ntnu.no/jou

	on Chironomidae Research	Science and Technology, Museum of Natural History and Archaeology, Trondheim		rnals/chironomus/
39	Revista de la Sociedad Entomológica Argentina	Sociedad Entomológica Argentina	373	http://www.scielo.org.ar/scielo.php?script=sci_serial&pid=0373-5680&lng=en&nrm=iso
40	HUITZIL : Journal of Mexican Ornithology	Sociedad para el estudio y conservacion de las aves	1870	http://www.huitzil.net
41	Wildfowl	Wildfowl & Wetlands Trust	954	http://wildfowl.wwt.org.uk
42	Illiesia	Slovenian Museum of Natural History, Mississippi College	1854	http://www2.pms-lj.si/illiesia
43	Polish Polar Research	Versita	138	http://www.versita.com/ppr
44	Hystrix : the Italian Journal of Mammalogy	Associazione Teriologica Italiana	394	http://www.italian-journal-of-mammalogy.it/
45	11111	Cernuelle	2107	http://www.cernuelle.com/download.php?lng=fr
46	Arachnologische Mitteilungen	Arachnologische Gesellschaft (ARAGES)	1018	http://arages.de/aramit/index_en.php
47	IUCN Otter Specialist Group Bulletin	IUCN Otter Specialist Group	1023	http://www.otterspecialistgroup.org/Bulletin/IUCNOSGBull.html
48	Pachyderm : Journal of the African Elephant, African Rhino and Asian Rhino Specialist Groups	International Union for Conservation of Nature (IUCN)	1026	http://www.pachydermjournals.org
49	Iheringia. Série Zoologia	Fundação Zoobotânica do Rio Grande do Sul	73	http://www.scielo.br/isz
50	Raptors Conservation	Siberian Environmental Center (Novosibirsk) and Center of Field Studies (N.Novgorod)	1814	http://ecoclub.nsu.ru/raptors/RC/
51	Sociobiology	Universidade Estadual de Feira de Santana	361	http://periodicos.uefs.br/ojs/index.php/sociobiology
52	Arxius de Miscel·lània Zoològica	Museu de Ciències Naturals de Barcelona	1698	http://amz.museucienciesjournals.cat/ques/?lang=en
53	Journal of Insect Biodiversity	Insect Biodiversity Research Group	1698	http://www.insectbiodiversity.org
54	African Primates	IUCN/SSC Primate Specialist Group	1093	http://journals.sfu.ca/afrprim/index.php/AfricanPrimates
55	Animal Biodiversity and Conservation	The Natural Science Museum of Barcelona	1578	http://abc.museucienciesjournals.cat/?lang=en
56	Papéis avulsos de zoologia.	USP	31	http://www.scielo.br/scielo.php/script_sci_serial/pid

				_0031-1049/lng_en/nrm_iso
57	Journal of Threatened Taxa	Wildlife Information Liaison Development Society	974	http://threatenedtaxa.org/
58	Polish Journal of Entomology	De Gruyter Open	2299	http://www.degruyter.com/view/j/pjen
59	Revista Catalana d'Ornitologia	Ornithological Catalan Institute	1697	http://www.ornitologia.org/ca/queoferim/divulgacio/publicacions/rco.html
60	Wildlife Biology in Practice	Sociedade Portuguesa de Vida Selvagem	1646	http://www.socpvs.org/wbp/index.php/wbp
61	Amphibian & Reptile Conservation	Amphibian & Reptile Conservation	1083	http://amphibian-reptile-conservation.org/
62	International Journal of Zoological Research	Academic Journals Inc	1811	http://scialert.net/jindex.php?issn=1811-9778
63	Acta Zoológica Mexicana	Instituto de Ecología A.C.	65	http://www1.inecol.edu.mx/azm/presentation.htm
64	Acta Biologica Malaysiana	Universiti Putra Malaysia	2232	http://www.science.upm.edu.my/biology/abm/
65	Anales de Biología	Universidad de Murcia	1989	http://www.um.es/analesdebiologia/
66	Nemus : Revista de l'Ateneu de Natura	Ateneu de Natura	1697	http://ateneudenatura.uji.es/Nemus/nemus.htm
67	Galemys : Spanish Journal of Mammalogy	Sociedad Española para la Conservación y Estudios de los Mamíferos (SECEM)	1137	http://www.secem.es/galemys/index.php/Galemys/issue/view/1/showToc
68	Archivos de Zootecnia : Revista Trimestral	Universidad de Córdoba	4	http://www.uco.es/organiza/servicios/publica/az/az.htm
69	Gayana (Concepción)	Universidad de Concepción	717	http://www.scielo.cl/scielo.php?script=sci_serial&pid=0717-6538&lng=en&nrm=iso
70	Journal of the Arkansas Academy of Science	Arkansas Academy of Science	2326	http://libinfo.uark.edu/aas/
71	Latin American Journal of Conservation	ProCAT	2027	http://www.procat-conservation.org/rev.lat.conservacion
72	Ribarstvo : Croatian Journal of Fisheries	University of Zagreb & Croatian Ichthyological Society	1330	http://ribarstvo.agr.hr/
73	Zootecnia Tropical	Instituto Nacional de Investigaciones Agrícolas Venezuela	798	http://www.sian.inia.gov.ve/repositorio/revistas_ci/ZootecniaTropical/ztindice.htm
74	Folia faunistica Slovaca	Faunima	1335	http://www.ffs.sk/
75	Hacquetia	De Gruyter Open	1854	http://www.degruyter.com/view/j/hacq
76	Analele Universitatii din	University of Oradea	1224	http://www.bioresearch.ro/

	Oradea, Fascicula Biologie	Publishing House		revistaen.html
77	Journal of Biology and Earth Sciences	Journal of Biology and Earth Sciences	2084	http://www.journals.tmkarpinski.com/index.php/jbes
78	Orsis : Organismes i Sistemes	Universitat Autònoma de Barcelona	213	http://ddd.uab.cat/record/34
79	Acta Biológica Paranaense	Universidade Federal do Paraná	301	http://ojs.c3sl.ufpr.br/ojs2/index.php/acta/
80	Casopis Slezského Zemského Muzea (A)	De Gruyter Open	2336	http://www.degruyter.com/view/j/cszma
81	Biological Letters	De Gruyter Open	1734	http://www.degruyter.com/view/j/biolet
82	Boletim do Museu Paraense Emílio Goeldi : Ciências Naturais	Museu Paraense Emílio Goeldi	1981	http://www.museu-goeldi.br/editora/naturais
83	Biodiversity Science	Science Press	1005	http://www.biodiversity-science.net/EN/volumn/home.shtml
84	Annals of West University of Timisura: Series of Biology	West University of Timisoara	1582	http://www.biologie.uvt.ro/annals.html
85	Biharean Biologist	University of Oradea	1843	http://biozoojournals.3x.ro/bihbiol/index.html
56	BIO Web of Conferences	EDP Sciences	2117	http://www.bio-conferences.org
87	Sitientibus : Série Ciências Biológicas	Universidade Estadual de Feira de Santana	1519	http://hidra.uefs.br/ojs/index.php/sitientibusBiologia/index
88	Memorias de la Conferencia Interna en Medicina y Aprovechamiento de Fauna Silvestre, Exótica y no Convencional	Asociacion de Veterinarios de Vida Silvestre	2011	http://veterinariosvs.org/pub/index.php/cima/
89	Ecología en Bolivia	Universidad Mayor de San Andrés	1605	http://www.scielo.org.bo/scielo.php?script=sci_serial&lng=es&pid=1605-2528&nrm=iso
90	Revista Facultad Nacional de Agronomía	Universidad Nacional de Colombia, Sede Medellín	304	http://www.scielo.org.co/scielo.php?script=sci_serial&pid=0304-2847&lng=en&nrm=iso
91	Bulletin of Taras Shevchenko National University of Kyiv. Series: Biology	Taras Shevchenko National University of Kyiv	1728	http://biovestnik.com/index.php/about-us/33-seriya-problemy-regulyatsii-fiziologicheskikh-funksij
92	BioigicnitVisnikMaitoplosKogoDelzavnogoPedagogicnogoUniversiteu imeniBodonahmelnicko	Bogdan Chmelniyskiy Melitopol State Pedagogical University	2225	http://ojs.mdpu.org.ua/index.php/biol

	go			
93	Stuttgarter Beiträge zur Naturkunde A (Biologie)	Staatliches Museum für Naturkunde, Stuttgart	341	http://www.naturkundemuseum-bw.de/publikationen/stuttgarter-beitraege-zur-naturkunde-serie-a
94	Revista del Museo Argentino de Ciencias Naturales	Museo Argentino de Ciencias Naturales Bernardino Rivadavia e Instituto Nacional de Investigación de las Ciencias Naturales	1514	http://www.scielo.org.ar/scielo.php?script=sci_serial&pid=1853-0400&lng=en&nrm=iso

From table No.1 Total 94 Zoology e-Journals were analyzed based on Publisher, ISSN/ ESSN and URL.

Table No.2 Yearwise Publication of E-journals

No	Title of E-journal	Started Publishing
01	ISRN Zoology	2011
02	North-Western Journal of Zoology	2005
03	Contributions to Zoology	1997
04	Alternative title: Dongwu Xuebao	2009
05	MalaCo	2005
06	Bonn Zoological Bulletin	2010
07	Invertebrate Survival Journal	2004
08	Malacologica Bohemoslovaca	2005
09	The Raffles Bulletin of Zoology	1988
10	Vestnik Zoologii	2008
11	European Journal of Taxonomy	2011
12	Ecotropicos	1988

13	Slovak Raptor Journal	2008
14	Fauna Norvegica	2009
15	Chiroptera Neotropical	2008
16	Revue de Primatologie	2009
17	Journal of Entomological and Acarological Research	2010
18	Ornitología Colombiana	2003
19	Mollusca	2007
20	Acta Herpetologica	2006
21	Phyllomedusa : Journal of Herpetology	2002
22	Zoological Research	2004
23	Boletín SAO	1990
24	Biawak	2007
25	Zoologische Mededelingen	2006
26	Ring	2002
27	ZooNotes	2009
28	Euscorpius	2001
29	Ruthenica : Russian Malacological Journa	2008
30	ISRN Entomology	2013
31	Arthropod Systematics & Phylogeny	2006
32	Opuscula Zoologica Instituti Zoosystematici et Oecologici Universitatis Budapestinensis	2001
33	Neotropical Helminthology	2007

34	Cuadernos de Herpetología	2010
35	Graellsia	1995
36	SHILAP Revista de Lepidopterología	2005
37	European Mosquito Bulletin	1998
38	Chironomus Newsletter on Chironomidae Research	2000
39	Revista de la Sociedad Entomológica Argentina	2003
40	HUITZIL : Journal of Mexican Ornithology	2000
41	Wildfowl	1948
42	Illiesia	2005
43	Polish Polar Research	2010
44	Hystrix : the Italian Journal of Mammalogy	1986
45	11111	2010
46	Arachnologische Mitteilungen	1991
47	IUCN Otter Specialist Group Bulletin	1998
48	Pachyderm : Journal of the African Elephant, African Rhino and Asian Rhino Specialist Groups	2007
49	Iheringia. Série Zoologia	2000
50	Raptors Conservation	2005
51	Sociobiology	2013
52	Arxius de Miscel-lània Zoològica	2003
53	Journal of Insect Biodiversity	2013
54	African Primates	2010

55	Animal Biodiversity and Conservation	2001
56	Papéis avulsos de zoologia.	2002
57	Journal of Threatened Taxa	2009
58	Polish Journal of Entomology	2011
59	Revista Catalana d'Ornitologia	2002
60	Wildlife Biology in Practice	2005
61	Amphibian & Reptile Conservation	2004
62	International Journal of Zoological Research	2005
63	Acta Zoológica Mexicana	1994
64	Acta Biologica Malaysiana	2012
65	Anales de Biología	1984
66	Nemus : Revista de l'Ateneu de Natura	2012
67	Galemys : Spanish Journal of Mammalogy	2011
68	Archivos de Zootecnia : Revista Trimestral	1975
69	Gayana (Concepción)	2000
70	Journal of the Arkansas Academy of Science	1997
71	Latin American Journal of Conservation	2010
72	Ribarstvo : Croatian Journal of Fisheries	1995
73	Zootecnia Tropical	1983
74	Folia faunistica Slovaca	1996
75	Hacquetia	2007
76	Analele Universitatii din Oradea, Fascicula Biologie	2005

77	Journal of Biology and Earth Sciences	2011
78	Orsis : Organismes i Sistemes	1985
79	Acta Biológica Paranaense	1972
80	Casopis Slezskeho Zemskeho Muzea (A)	2011
81	Biological Letters	2009
82	Boletim do Museu Paraense Emílio Goeldi : Ciências Naturais	2006
83	Biodiversity Science	1993
84	Annals of West University of Timisura: Series of Biology	1990
85	Biharean Biologist	2007
56	BIO Web of Conferences	2011
87	Sitientibus : Série Ciências Biológicas	2001
88	Memorias de la Conferencia Interna en Medicina y Aprovechamiento de Fauna Silvestre, Exótica y no Convencional	2006
89	Ecología en Bolivia	2003
90	Revista Facultad Nacional de Agronomía	2004
91	Bulletin of Taras Shevchenko National University of Kyiv. Series: Biology	2005
92	BioigicnitVisnikMaitoplosKogoDelzavnogoPedogogicnogoUniversiteuimeniBodonahmelnickogo	2011
93	Stuttgarter Beiträge zur Naturkunde A (Biologie)	1999
94	Revista del Museo Argentino de Ciencias Naturales	2009

From table No.02 Shows analyses of E-Journals Started Publishing in DOAJ. More e-journals are Started publishing in DOAJ in 2010, in this year 12 e-journals Started publishing in DOAJ.

Table No.03 SUBJECT-WISE DISTRIBUTION of E-JOURNAL

No	Title of journal	SUBJECT
01	ISRN Zoology	Zoology, Science
02	North-Western Journal of Zoology	Zoology, Science
03	Contributions to Zoology	Science, Zoology
04	Alternative title: Dongwu Xuebao	Zoology, Science
05	MalaCo	Zoology, Science
06	Bonn Zoological Bulletin	Zoology, Science
07	Invertebrate Survival Journal	Zoology, Science
08	Malacologica Bohemoslovaca	Zoology, Science
09	The Raffles Bulletin of Zoology	Science, Zoology
10	Vestnik Zoologii	Science, Zoology
11	European Journal of Taxonomy	Zoology, Science, Botany, Science
12	Ecotropicos	Zoology, Science, Ecology, Biology (General), Science
13	Slovak Raptor Journal	Science, Zoology
14	Fauna Norvegica	Zoology, Science
15	Chiroptera Neotropical	Zoology, Science
16	Revue de Primatologie	Zoology, Science
17	Journal of Entomological and Acarological Research	Zoology, Science
18	Ornitología Colombiana	Zoology, Science
19	Mollusca	Zoology, Science
20	Acta Herpetologica	Zoology, Science

21	Phyllomedusa : Journal of Herpetology	Zoology, Science
22	Zoological Research	Zoology, Science
23	Boletín SAO	Zoology, Science
24	Biawak	Zoology, Science
25	Zoologische Mededelingen	Science, Zoology
26	Ring	Zoology, Science
27	ZooNotes	Zoology, Science
28	Euscorpius	Zoology, Science
29	Ruthenica : Russian Malacological Journa	Zoology, Science
30	ISRN Entomology	Zoology, Science
31	Arthropod Systematics & Phylogeny	Zoology, Science
32	Opuscula Zoologica Instituti Zoosystematici et Oecologici Universitatis Budapestinensis	Ecology, Biology (General), Science, Zoology, Science
33	Neotropical Helminthology	Zoology, Science
34	Cuadernos de Herpetología	Zoology, Science
35	Graellsia	Zoology, Science
36	SHILAP Revista de Lepidopterología	Zoology, Science, Biology (General), Science
37	European Mosquito Bulletin	Zoology, Science, Biology (General), Science
38	Chironomus Newsletter on Chironomidae Research	Zoology, Science, Biology (General), Science
39	Revista de la Sociedad Entomológica Argentina	Zoology, Science, Biology (General), Science

40	HUITZIL : Journal of Mexican Ornithology	Zoology, Science, Biology (General), Science
41	Wildfowl	Zoology, Science, Biology (General), Science
42	Illiesia	Zoology, Science, Biology (General), Science
43	Polish Polar Research	Geology, Science, Zoology, Science
44	Hystrix : the Italian Journal of Mammalogy	Zoology, Science
45	11111	Zoology, Science
46	Arachnologische Mitteilungen	Zoology, Science
47	IUCN Otter Specialist Group Bulletin	Zoology, Science
48	Pachyderm : Journal of the African Elephant, African Rhino and Asian Rhino Specialist Groups	Zoology, Science
49	Iheringia. Série Zoologia	Zoology, Science
50	Raptors Conservation	Zoology, Science
51	Sociobiology	Zoology, Science
52	Arxius de Miscel-lània Zoològica	Zoology, Science
53	Journal of Insect Biodiversity	Zoology, Science
54	African Primates	Zoology, Science
55	Animal Biodiversity and Conservation	Zoology, Science
56	Papéis avulsos de zoologia.	Zoology, Science
57	Journal of Threatened Taxa	Zoology, Science, Botany, Science
58	Polish Journal of Entomology	Science, Zoology

59	Revista Catalana d'Ornitologia	Zoology, Science
60	Wildlife Biology in Practice	Biology (General), Science, Zoology, Science
61	Amphibian & Reptile Conservation	Science, Zoology
62	International Journal of Zoological Research	Zoology, Science
63	Acta Zoológica Mexicana	Science, Biology (General), Zoology
64	Acta Biologica Malaysiana	Biology (General), Science
65	Anales de Biología	Biology (General), Science
66	Nemus : Revista de l'Ateneu de Natura	General Works
67	Galemys : Spanish Journal of Mammalogy	Zoology, Science
68	Archivos de Zootecnia : Revista Trimestral	Zoology, Science, Animal culture, Agriculture
69	Gayana (Concepción)	Zoology, Science, Oceanography, Geography. Anthropology. Recreation
70	Journal of the Arkansas Academy of Science	Science (General), Science
71	Latin American Journal of Conservation	Zoology, Science, Ecology, Biology (General), Science
72	Ribarstvo : Croatian Journal of Fisheries	Aquaculture. Fisheries. Angling, Agriculture, Zoology, Science
73	Zootecnia Tropical	Animal culture, Agriculture
74	Folia faunistica Slovaca	Biology (General), Science
75	Hacquetia	Agriculture, Agriculture (General)
76	Analele Universitatii din Oradea, Fascicula Biologie	Biology (General), Science

77	Journal of Biology and Earth Sciences	Biology (General), Science
78	Orsis : Organismes i Sistemes	Biology (General), Science
79	Acta Biológica Paranaense	Biology (General), Science
80	Casopis Slezskeho Zemskeho Muzea (A)	Casopis Slezskeho Zemskeho Muzea (A)
81	Biological Letters	Science, Biology (General)
82	Boletim do Museu Paraense Emílio Goeldi : Ciências Naturais	Science (General), Science
83	Biodiversity Science	Biology (General), Science
84	Annals of West University of Timisura: Series of Biology	Biology (General), Science
85	Biharean Biologist	Biology (General), Science
56	BIO Web of Conferences	Biology (General), Science
87	Sitentibus : Série Ciências Biológicas	Biology (General), Science
88	Memorias de la Conferencia Interna en Medicina y Aprovechamiento de Fauna Silvestre, Exótica y no Convencional	Animal culture, Agriculture
89	Ecología en Bolivia	Ecology, Biology (General), Science
90	Revista Facultad Nacional de Agronomía	Agriculture (General), Agriculture
91	Bulletin of Taras Shevchenko National University of Kyiv. Series: Biology	Biology (General), Science
92	BioiogicnitVisnikMaitoplosKogoDelzavnogoPedogogicnogoUniversiteuimeniBodonahmelnickogo	Biology (General), Science
93	Stuttgarter Beiträge zur Naturkunde A (Biologie)	Biology (General), Science

94	Revista del Museo Argentino de Ciencias Naturales	Science (General), Science
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Table No 03.a Subject wise Distribution Frequency of E-journal

Sr No	Subject	Frequency	Rank
01	Zoology, Science	41	1
02	Agriculture (General), Agriculture	15	1
03	Agriculture, Agriculture (General)	7	2
04	Animal culture, Agriculture	7	2
05	Aquaculture. Fisheries. Angling, Agriculture, Zoology, Science	3	2
06	Biology (General), Science	2	1
07	Biology (General), Science, Zoology, Science	2	1
08	Casopis Slezskeho Zemskeho Muzea (A)	2	1
09	Ecology, Biology (General), Science	1	3
10	Ecology, Biology (General), Science, Zoology, Science	1	3
11	General Works	1	3
12	Geology, Science, Zoology, Science	1	3
13	Science (General), Science	1	3
14	Science, Biology (General)	1	3
15	Science, Biology (General), Zoology	1	3
16	Science, Zoology	1	3
17	Zoology, Science	1	3

18	Zoology, Science, Animal culture, Agriculture	1	3
19	Zoology, Science, Biology (General), Science	1	3
20	Zoology, Science, Botany, Science	1	3
21	Zoology, Science, Ecology, Biology (General), Science	1	3
22	Zoology, Science, Oceanography, Geography. Anthropology. Recreation	1	3
23	Zoology, Science	1	3
Total		94	/

From Table No. 03 analyse Subject wise Distribution of E-Journals. They are 1st no. Zoology science, Second no Agriculture [Agriculture (General), Agriculture Agriculture, Third no is Agriculture Economic Agriculture Agriculture (General) Aquaculture. Fisheries. Angling, Agriculture, Zoology fourth No is, Science Biology (General), Science.

Table No 04 Language wise Distribution of E-journal

No	Title of E-Journal	Language
01	ISRN Zoology	English
02	North-Western Journal of Zoology	English
03	Contributions to Zoology	No Available
04	Alternative title: Dongwu Xuebao	Chinese, English
05	MalaCo	French, English
06	Bonn Zoological Bulletin	English
07	Invertebrate Survival Journal	English
08	Malacologica Bohemoslovaca	English, Czech, Slovak
09	The Raffles Bulletin of Zoology	No Available
10	Vestnik Zoologii	No Available
11	European Journal of Taxonomy	No Available
12	Ecotropicos	Spanish, English
13	Slovak Raptor Journal	No Available
14	Fauna Norvegica	English

15	Chiroptera Neotropical	English, Portuguese, Spanish
16	Revue de Primatologie	French, English
17	Journal of Entomological and Acarological Research	English
18	Ornitología Colombiana	Spanish, English
19	Mollusca	English, German
20	Acta Herpetologica	English, Italian
21	Phyllomedusa : Journal of Herpetology	English
22	Zoological Research	English
23	Boletín SAO	Spanish, English
24	Biawak	English
25	Zoologische Mededelingen	No Available
26	Ring	English
27	ZooNotes	Bulgarian, English
28	Euscorpius	English
29	Ruthenica : Russian Malacological Journal	English, Russian
30	ISRN Entomology	English
31	Arthropod Systematics & Phylogeny	English
32	Opuscula Zoologica Instituti Zoosystematici et Oecologici Universitatis Budapestinensis	English, German
33	Neotropical Helminthology	English, Spanish. Portuguese
34	Cuadernos de Herpetología	Spanish, English, Portuguese
35	Graellsia	Spanish, English
36	SHILAP Revista de Lepidopterología	Spanish, English, Italian, French
37	European Mosquito Bulletin	English
38	Chironomus Newsletter on Chironomidae Research	English
39	Revista de la Sociedad Entomológica Argentina	Spanish, English
40	HUITZIL : Journal of Mexican Ornithology	Spanish, English, French
41	Wildfowl	English
42	Illiesia	English

43	Polish Polar Research	English
44	Hystrix : the Italian Journal of Mammalogy	English, Italian
45	11111	French, English
46	Arachnologische Mitteilungen	German, English
47	IUCN Otter Specialist Group Bulletin	English
48	Pachyderm : Journal of the African Elephant, African Rhino and Asian Rhino Specialist Groups	English, French
49	Iheringia. Série Zoologia	English, Portuguese, Spanish
50	Raptors Conservation	Russian, English
51	Sociobiology	English
52	Arxius de Miscel·lània Zoològica	English, Spanish, Catalan
53	Journal of Insect Biodiversity	English
54	African Primates	English
55	Animal Biodiversity and Conservation	English, Spanish, Catalan
56	Papéis avulsos de zoologia.	English, Spanish, Portuguese
57	Journal of Threatened Taxa	English
58	Polish Journal of Entomology	No Available
59	Revista Catalana d'Ornitologia	Catalan, Spanish, English
60	Wildlife Biology in Practice	English
61	Amphibian & Reptile Conservation	No Available
62	International Journal of Zoological Research	English
63	Acta Zoológica Mexicana	No Available
64	Acta Biologica Malaysiana	English
65	Anales de Biología	Spanish, English
66	Nemus : Revista de l'Ateneu de Natura	Catalan, Spanish
67	Galemys : Spanish Journal of Mammalogy	English, Spanish
68	Archivos de Zootecnia : Revista Trimestral	Spanish, English, French, Portuguese,

		Italian
69	Gayana (Concepción)	English, Spanish, French
70	Journal of the Arkansas Academy of Science	English
71	Latin American Journal of Conservation	Spanish, English
72	Ribarstvo : Croatian Journal of Fisheries	English, Croatian
73	Zootecnia Tropical	English, Portuguese, Spanish
74	Folia faunistica Slovaca	English, Slovak, Czech
75	Hacquetia	No Available
76	Analele Universitatii din Oradea, Fascicula Biologie	English
77	Journal of Biology and Earth Sciences	English
78	Orsis : Organismes i Sistemes	Spanish, English, French, Catalan
79	Acta Biológica Paranaense	Portuguese, English, French, Spanish
80	Casopis Slezského Zemskeho Muzea (A)	No Available
81	Biological Letters	No Available
82	Boletim do Museu Paraense Emílio Goeldi : Ciências Naturais	Portuguese, Spanish, English (UK)
83	Biodiversity Science	English
84	Annals of West University of Timisura: Series of Biology	English, Romanian, German, French
85	Biharean Biologist	Romanian, English
56	BIO Web of Conferences	English
87	Sitentibus : Série Ciências Biológicas	Portuguese, Spanish, English
88	Memorias de la Conferencia Interna en Medicina y Aprovechamiento de Fauna Silvestre, Exótica y no Convencional	Spanish
89	Ecología en Bolivia	Spanish, English
90	Revista Facultad Nacional de Agronomía	Spanish, English, Portuguese
91	Bulletin of Taras Shevchenko National University of Kyiv.	Ukrainian, Russian,

	Series: Biology	English
92	BioiogenicitVisnikMaitoplosKogoDelzavnogoPedagogicnogoU niversiteuimeniBodonahmelnickogo	Ukrainian, Russian
93	Stuttgarter Beiträge zur Naturkunde A (Biologie)	English, German
94	Revista del Museo Argentino de Ciencias Naturales	Spanish, English

Table No.04.a Language -Wise Frequency of E-Journal

No	Language	Frequency	Rank
01	Bulgarian, English	31	1
02	Catalan, Spanish	10	1
03	Catalan, Spanish, English	3	3
04	Chinese, English	3	3
05	English	3	3
06	English, Croatian	3	3
07	English, Czech, Slovak	2	4
08	English, French	2	4
09	English, German	2	4
10	English, Italian	1	5
11	English, Portuguese, Spanish	1	5
12	English, Romanian, German, French	1	5
13	English, Russian	1	5

14	English, Slovak, Czech	1	5
15	English, Spanish	1	5
16	English, Spanish, Catalan	1	5
17	English, Spanish, French	1	5
18	English, Spanish, Portuguese	1	5
19	English, Spanish, Portuguese	1	5
20	French, English	1	5
21	German, English	1	5
22	No Available	1	5
23	No Available	1	5
24	Portuguese, English, French, Spanish	1	5
25	Portuguese, Spanish, English	9	1
26	Portuguese, Spanish, English (UK)	2	4
27	Romanian, English	1	5
28	Russian, English	1	5
29	Spanish	1	5
30	Spanish, English	1	5
31	Spanish, English, French	1	5
32	Spanish, English, French, Catalan	1	5
33	Spanish, English, French, Portuguese, Italian	1	5
34	Spanish, English, Italian, French	1	5
35	Spanish, English, Portuguese	1	5

36	Ukrainian, Russian	1	5
37	Spanish, English, Italian, French	1	5
Total		94	/

In the Table No. 04 shows Language wise Distribution of E- Journals. The first Language is Bulgarian, English, second language is Catalan Spanish language third language is Portuguese, Spanish, English Fourth language is English, Czech, Slovak fifth language is Spanish, Russian, English name is six languages is not available on Doaj. English, Serbian, English, Spanish, English, Spanish, English, Italian, French Spanish, English, Italian, French.

Table No 05 Keywords-Wise Distribution of E-Journal

No	Title of E-Journal	Keywords
01	ISRN Zoology	zoology
02	North-Western Journal of Zoology	zoology, animal ecology, herpetology
03	Contributions to Zoology	zoology
04	Alternative title: Dongwu Xuebao	conservation biology, ecology, ethology, evolution, genomics
05	MalaCo	invertebrate zoology, malacology, molluscs, gastropoda, snails
06	Bonn Zoological Bulletin	zoology, terrestrial animals, taxonomy and systematics, evolution, biodiversity
07	Invertebrate Survival Journal	invertebrates, biotechnology
08	Malacologica Bohemoslovaca	invertebrate zoology, malacology, molluscs, bivalves, gastropoda, snails, slugs
09	The Raffles Bulletin of Zoology	taxonomy, ecology, conservation biology, fauna, Southeast Asia

10	Vestnik Zoology	animal science, zoology, taxonomy, histology, morphology, animal ecology, biogeography
11	European Journal of Taxonomy	taxonomy, natural history, systematics, zoology, botany, palaeontology
12	Ecotropicos	ecosystems of Venezuela, ecology, zoology, tropical wildlife, aquatic sciences
13	Slovak Raptor Journal	zoology, birds of prey and owls
14	Fauna Norvegica	taxonomy, biodiversity
15	Chiroptera Neotropical	neotropical bats, biogeography, Latin America, conservation
16	Revue de Primatologie	primatology
17	Journal of Entomological and Acarological Research	entomology, acarology, insects
18	Ornitología Colombiana	Colombia, neotropical birds, ornithology, South America
19	Mollusca	taxonomy, phylogenetics, morphology, ecology, faunistics, palaeontology
20	Acta Herpetologica	amphibians, reptiles
21	Phyllomedusa : Journal of Herpetology	herpetology, amphibians, reptiles
22	Zoological Research	0254-5853
23	Boletín SAO	Neotropical, ornithology, birds
24	Biawak	varanid biology, husbandry
25	Zoologische Mededelingen	vertebrate biology, invertebrate biology
26	Ring	ornithology, bird migration, monitoring

27	ZooNotes	taxonomy, faunistics, zoogeography animal ecology
28	Euscorpius	scorpions, taxonomy, morphology, systematics, evolution, behaviour
29	Ruthenica : Russian Malacological Journals	Mollusca, malacology, ecology, phylogeny, morphology, biodiversity, taxonomy
30	SRN Entomology	behavior, biochemistry, physiology, ecology, insects
31	Arthropod Systematics & Phylogeny	systematics, phylogeny, taxonomy, arthropoda
32	Opuscula Zoologica Instituti Zoosystematici et Oecologici Universitatis Budapestinensis	taxonomy, ecology, soil zoology, hydrobiology
33	Neotropical Helminthology	helminth, nematoda, platyhelminthes, acanthocephalans
34	Cuadernos de Herpetología	herpetology, amphibians, reptiles
35	Graellsia	taxonomy, faunistics, biogeography, corology, evolution, conservation
36	SHILAP Revista de Lepidopterología	insects, lepidopterology
37	European Mosquito Bulletin	mosquito, Europe, taxonomy, identification, disease relation
38	Chironomus Newsletter on Chironomidae Research	Chironomidae, non-biting midges
39	Revista de la Sociedad Entomológica Argentina	entomology
40	HUITZIL : Journal of Mexican Ornithology	birds, Mexico, new bird registers
41	Wildfowl	wildfowl, wetlands, ducks, geese, swans, waterbirds, habitat management

42	Illiesia	stoneflies, plecoptera, insects
43	Polish Polar Research	Arctic, Antarctic, life sciences, geosciences
44	Hystrix : the Italian Journal of Mammalogy	mammals, biology, conservation
45	11111	malacology, conchology, history of science, collections of museums, land, freshwater, mollusks
46	Arachnologische Mitteilungen	faunistics, taxonomy, ecology, behaviour, insects, arachnids, European arachnids, entomology
47	IUCN Otter Specialist Group Bulletin	otter, taxonomy, toxicology, biology, conservation
48	Pachyderm : Journal of the African Elephant, African Rhino and Asian Rhino Specialist Groups	rhinoceros, African elephant, wildlife conservation, wildlife management
49	Iheringia. Série Zoologia	biological sciences
50	Raptors Conservation	birds of prey and owls, bird conservation, raptors, raptor conservation
51	Sociobiology	social insects, entomology, caste differentiation, trophic interactions, ecology
52	Arxius de Miscel-lània Zoològica	faunistics, chorology, phenology, morphology, descriptive ecology, zoological diversity
53	Journal of Insect Biodiversity	insect taxonomy, insect systematics, insect morphology, insect biogeography, insect conservation
54	African Primates	primates, endangered species, wildlife conservation, Africa
55	Animal Biodiversity and Conservation	systematics, taxonomy, morphology, biogeography, ecology, ethology, physiology,

		genetics
56	Papéis avulsos de zoologia.	biological sciences
57	Journal of Threatened Taxa	taxonomy, conservation, wildlife, fauna, flora, fungi
58	Polish Journal of Entomology	entomology, insects
59	Revista Catalana d'Ornitologia	ornithology, bird management, conservation, Mediterranean, monitoring
60	Wildlife Biology in Practice	wildlife, management, biology
61	Amphibian & Reptile Conservation	amphibians, reptiles, biodiversity, taxonomy, ecology, sustainable management
62	International Journal of Zoological Research	anatomy, physiology, genetics, parasitology, morphology, behaviour, ecology, zoogeography, evolution
63	Acta Zoológica Mexicana	behaviour, ecology, evolution, physiology, genetics, morphology, zoogeography
64	Acta Biologica Malaysiana	ecology, pollution, zoology, nutrients
65	Anales de Biología	ecology, zoology, botany, taxonomy
66	Nemus : Revista de l'Ateneu de Natura	palaeontology, zoology, botany, ecology, conservation
67	Galemys : Spanish Journal of Mammalogy	mammal, Spanish, Iberian, systematics, ecology
68	Archivos de Zootecnia : Revista Trimestral	zootechnics, genetics, ethnology, reproduction, economy
69	Gayana (Concepción)	biological sciences
70	Journal of the Arkansas Academy of Science	biomedicine, botany, chemistry, physics, engineering, environmental sciences, zoology

71	Latin American Journal of Conservation	conservation, species management, sustainable ecosystem management, ecology, biology, Latin America
72	Ribarstvo : Croatian Journal of Fisheries	aquaculture, fisheries, ichthyology
73	Zootecnia Tropical	zoology, animal production, aquaculture, tropical environment
74	Folia faunistica Slovaca	fauna, biodiversity, zoology, Europe, Slovakia, Carpathians, Pannonia
75	Hacquetia	agriculture, biology, botany, ecology, plant science, zoology
76	Analele Universitatii din Oradea, Fascicula Biologie	botany, biotechnology, biology, ecology, zoology
77	Journal of Biology and Earth Sciences	earth sciences, biomedical sciences, botany, zoology, geology, geography
78	Orsis : Organismes i Sistemes	ecology, zoology
79	Acta Biológica Paranaense	natural history, biology, genetics, zoology, botany
80	Casopis Slezskeho Zemskeho Muzea (A)	: natural sciences, biology, botany, zoology, geology
81	Biological Letters	life sciences, biology, ecology, zoology, botany
82	Boletim do Museu Paraense Emílio Goeldi : Ciências Naturais	zoology, biology, geology
83	Biodiversity Science	conservation biology, botany, zoology, microbiology, ecology
84	Annals of West University of Timisura: Series of Biology	zoology, botany, cell biology, immunology, genetics
85	Biharean Biologist	ecology, zoology, botany, biotechnology

86	BIO Web of Conferences	botany, zoology, genetics, microbiology, physiology
87	Sitientibus : Série Ciências Biológicas	botany, ecology, ethnobiology, genetics, zoology
88	Memorias de la Conferencia Interna en Medicina y Aprovechamiento de Fauna Silvestre, Exótica y no Convencional	wildlife management, wildlife conservation, zoology
89	Ecología en Bolivia	ecology, evolution, biogeography, botany, zoology, environmental quality
90	Revista Facultad Nacional de Agronomía	agronomy, agricultural engineering, zoology, forestry
91	Bulletin of Taras Shevchenko National University of Kyiv. Series: Biology	biochemistry, botany, ecology, genetics, zoology
92	BioigicnitVisnikMaitoplosKogoDelzavnogo PedagogicnogoUniversiteuimeniBodonahmel nickogo	ecology, botany, zoology, ornithology
93	Stuttgarter Beiträge zur Naturkunde A (Biologie)	zoology, botany, entomology, systematics, taxonomy
94	Revista del Museo Argentino de Ciencias Naturales	botany, zoology, paleontology, ecology, geology, Latin America

Table No 05.a keywords -wise Distribution of E-Journal

No	Keywords	Frequency
1	helminth, nematoda, platyhelminthes, acanthocephalans	3
2	systematics, phylogeny, taxonomy, arthropoda	3
3	natural sciences, biology, botany, zoology, geology	2
4	agriculture, biology, botany, ecology, plant science, zoology	1
5	agronomy, agricultural engineering, zoology, forestry	1
6	amphibians, reptiles	1

7	amphibians, reptiles, biodiversity, taxonomy, ecology, sustainable management	1
8	anatomy, physiology, genetics, parasitology, morphology, behaviour, ecology, zoogeography, evolution	1
9	animal science, zoology, taxonomy, histology, morphology, animal ecology, biogeography	1
10	aquaculture, fisheries, ichthyology	1
11	Arctic, Antarctic, life sciences, geosciences	1
12	behavior, biochemistry, physiology, ecology, insects	1
13	behaviour, ecology, evolution, physiology, genetics, morphology, zoogeography	1
14	biochemistry, botany, ecology, genetics, zoology	1
15	biological sciences	1
16	biomedicine, botany, chemistry, physics, engineering, environmental sciences, zoology	1
17	birds of prey and owls, bird conservation, raptors, raptor conservation	1
18	birds, Mexico, new bird registers	1
19	botany, biotechnology, biology, ecology, zoology	1
20	botany, ecology, ethnobiology, genetics, zoology	1
21	botany, zoology, genetics, microbiology, physiology	1
22	botany, zoology, paleontology, ecology, geology, Latin America	1
23	Chironomidae, non-biting midges	1
24	Colombia, neotropical birds, ornithology, South America	1
25	conservation biology, botany, zoology, microbiology, ecology	1
26	conservation biology, ecology, ethology, evolution, genomics	1
27	conservation, species management, sustainable ecosystem management, ecology, biology, Latin America	1
28	earth sciences, biomedical sciences, botany, zoology, geology, geography	1
29	ecology, botany, zoology, ornithology	1
30	ecology, evolution, biogeography, botany, zoology, environmental quality	1
31	ecology, pollution, zoology, nutrients	1
32	ecology, zoology	1
33	ecology, zoology, botany, biotechnology	1
34	ecology, zoology, botany, taxonomy	1
35	ecosystems of Venezuela, ecology, zoology, tropical wildlife, aquatic sciences	1

36	entomology	1
37	entomology, acarology, insects	1
38	entomology, insects	1
39	fauna, biodiversity, zoology, Europe, Slovakia, Carpathians, Pannonia	1
40	faunistics, chorology, phenology, morphology, descriptive ecology, zoological diversity	1
41	faunistics, taxonomy, ecology, behaviour, insects, arachnids, European arachnids, entomology	1
42	herpetology, amphibians, reptiles	1
43	insect taxonomy, insect systematics, insect morphology, insect biogeography, insect conservation	1
44	insects, lepidopterology	1
45	invertebrate zoology, malacology, molluscs, bivalves, gastropoda, snails, slugs	1
46	invertebrate zoology, malacology, molluscs, gastropoda, snails	1
47	invertebrates, biotechnology	1
48	life sciences, biology, ecology, zoology, botany	1
49	malacology, conchology, history of science, collections of museums, land, freshwater, mollusks	1
50	mammal, Spanish, Iberian, systematics, ecology	1
51	mammals, biology, conservation	1
52	Mollusca, malacology, ecology, phylogeny, morphology, biodiversity, taxonomy	1
53	mosquito, Europe, taxonomy, identification, disease relation	1
54	natural history, biology, genetics, zoology, botany	1
55	neotropical bats, biogeography, Latin America, conservation	1
56	Neotropical, ornithology, birds	1
57	ornithology, bird management, conservation, Mediterranean, monitoring	1
58	ornithology, bird migration, monitoring	1
59	otter, taxonomy, toxicology, biology, conservation	1
60	palaeontology, zoology, botany, ecology, conservation	1
61	primates, endangered species, wildlife conservation, Africa	1
62	primatology	1
63	rhinoceros, African elephant, wildlife conservation, wildlife management	1
64	scorpions, taxonomy, morphology, systematics, evolution, behaviour	1

65	social insects, entomology, caste differentiation, trophic interactions, ecology	1
66	stoneflies, plecoptera, insects	1
67	systematics, taxonomy, morphology, biogeography, ecology, ethology, physiology, genetics	1
68	taxonomy, biodiversity	1
69	taxonomy, conservation, wildlife, fauna, flora, fungi	1
70	taxonomy, ecology, conservation biology, fauna, Southeast Asia	1
71	taxonomy, ecology, soil zoology, hydrobiology	1
72	taxonomy, faunistics, biogeography, corology, evolution, conservation	1
73	taxonomy, faunistics, zoogeography, animal ecology	1
74	taxonomy, natural history, systematics, zoology, botany, palaeontology	1
75	taxonomy, phylogenetics, morphology, ecology, faunistics, palaeontology	1
76	varanid biology, husbandry	1
77	vertebrate biology, invertebrate biology	1
78	wildfowl, wetlands, ducks, geese, swans, waterbirds, habitat management	1
79	wildlife management, wildlife conservation, zoology	1
80	wildlife, management, biology	1
81	zoology	1
82	zoology, animal ecology, herpetology	1
83	zoology, animal production, aquaculture, tropical environment	1
84	zoology, biology, geology	1
85	zoology, birds of prey and owls	1
86	zoology, botany, cell biology, immunology, genetics	1
87	zoology, botany, entomology, systematics, taxonomy	1
88	zoology, terrestrial animals, taxonomy and systematics, evolution, biodiversity	1
89	zootechnics, genetics, ethnology, reproduction, economy	1
90	Total	94

In table No. 05 analyzes keywords-wise frequency, 89 keywords used in all 94 e-journals.

Table No 10 Country Wise-distribution of E-journal

N o	Title of Journal	Country of Publication
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01	ISRN Zoology	Egypt
02	North-Western Journal of Zoology	Romania
03	Contributions to Zoology	Netherlands
04	Alternative title: Dongwu Xuebao	China
05	MalaCo	France
06	Bonn Zoological Bulletin	Germany
07	Invertebrate Survival Journal	Italy
08	Malacologica Bohemoslovaca	Slovakia
09	The Raffles Bulletin of Zoology	Singapore
10	Vestnik Zoologii	Ukraine
11	European Journal of Taxonomy	France
12	Ecotropicos	Venezuela, Bolivarian Republic of
13	Slovak Raptor Journal	Slovakia
14	Fauna Norvegica	Norway
15	Chiroptera Neotropical	Brazil
16	Revue de Primatologie	France
17	Journal of Entomological and Acarological Research	Italy
18	Ornitología Colombiana	Colombia
19	Mollusca	Germany
20	Acta Herpetologica	Italy
21	Phyllomedusa : Journal of Herpetology	Brazil
22	Zoological Research	China
23	Boletín SAO	Colombia
24	Biawak	United States
25	Zoologische Mededelingen	Netherlands
26	Ring	Poland
27	ZooNotes	Bulgaria
28	Euscorpius	United States
29	Ruthenica : Russian Malacological Journa	Russian Federation
30	ISRN Entomology	Egypt
31	Arthropod Systematics & Phylogeny	Germany

32	Opuscula Zoologica Instituti Zoosystematici et Oecologici Universitatis Budapestinensis	Hungary
33	Neotropical Helminthology	Peru
34	Cuadernos de Herpetología	Argentina
35	Graellsia	Spain
36	SHILAP Revista de Lepidopterología	Spain
37	European Mosquito Bulletin	United Kingdom
38	Chironomus Newsletter on Chironomidae Research	Norway
39	Revista de la Sociedad Entomológica Argentina	Argentina
40	HUITZIL : Journal of Mexican Ornithology	Mexico
41	Wildfowl	United Kingdom
42	Illiesia	Slovenia
43	Polish Polar Research	Poland
44	Hystrix : the Italian Journal of Mammalogy	Italy
45	11111	France
46	Arachnologische Mitteilungen	Switzerland
47	IUCN Otter Specialist Group Bulletin	United Kingdom
48	Pachyderm : Journal of the African Elephant, African Rhino and Asian Rhino Specialist Groups	Kenya
49	Iheringia. Série Zoologia	Brazil
50	Raptors Conservation	Russian Federation
51	Sociobiology	Brazil
52	Arxius de Miscel·lània Zoològica	Spain
53	Journal of Insect Biodiversity	Turkey
54	African Primates	United States
55	Animal Biodiversity and Conservation	Spain
56	Papéis avulsos de zoologia.	Brazil
57	Journal of Threatened Taxa	India
58	Polish Journal of Entomology	Poland
59	Revista Catalana d'Ornitologia	Spain
60	Wildlife Biology in Practice	Portugal
61	Amphibian & Reptile Conservation	United States
62	International Journal of Zoological Research	Pakistan

63	Acta Zoológica Mexicana	Mexico
64	Acta Biologica Malaysiana	Malaysia
65	Anales de Biología	Spain
66	Nemus : Revista de l'Ateneu de Natura	Spain
67	Galemys : Spanish Journal of Mammalogy	Spain
68	Archivos de Zootecnia : Revista Trimestral	Spain
69	Gayana (Concepción)	Chile
70	Journal of the Arkansas Academy of Science	United States
71	Latin American Journal of Conservation	Colombia
72	Ribarstvo : Croatian Journal of Fisheries	Croatia
73	Zootecnia Tropical	Venezuela, Bolivarian Republic of
74	Folia faunistica Slovaca	Slovakia
75	Hacquetia	Slovenia
76	Analele Universitatii din Oradea, Fascicula Biologie	Romania
77	Journal of Biology and Earth Sciences	Poland
78	Orsis : Organismes i Sistemes	Spain
79	Acta Biológica Paranaense	Brazil
80	Casopis Slezskeho Zemskeho Muzea (A)	Czech Republic
81	Biological Letters	Poland
82	Boletim do Museu Paraense Emílio Goeldi : Ciências Naturais	Brazil
83	Biodiversity Science	China
84	Annals of West University of Timisura: Series of Biology	Romania
85	Biharean Biologist	Romania
56	BIO Web of Conferences	France
87	Sitentibus : Série Ciências Biológicas	Brazil
88	Memorias de la Conferencia Interna en Medicina y Aprovechamiento de Fauna Silvestre, Exótica y no Convencional	Colombia
89	Ecología en Bolivia	Bolivia, Plurinational State of
90	Revista Facultad Nacional de Agronomía	Colombia

91	Bulletin of Taras Shevchenko National University of Kyiv. Series: Biology	Ukraine
92	BioogicnitVisnikMaitoplosKogoDelzavnogoPedogogicnogoUniversiteuimeniBodonahmelnickogo	Ukraine
93	Stuttgarter Beiträge zur Naturkunde A (Biologie)	Germany
94	Revista del Museo Argentino de Ciencias Naturales	Argentina

Table No 06 Analysis of Country-Wise Frequency

NO	Country of Publication	Frequency	%	Rank
01	Argentina	10	10.3	1
02	Bolivia, Plurinational State of	8	8.24	2
03	Brazil	5	5.15	3
04	Bulgaria	5	5.15	1
05	Chile	4	4.12	1
06	China	4	4.12	1
07	Colombia	4	4.12	4
08	Croatia	4	4.12	4
09	Czech Republic	4	4.12	4
10	Egypt	4	4.12	5
11	France	3	3.09	1
12	Germany	3	3.09	1
13	Hungary	3	3.09	1
14	India	3	3.09	1
15	Italy	3	3.09	1
16	Kenya	2	2.06	6
17	Malaysia	2	2.06	5
18	Mexico	2	2.06	5
19	Netherlands	2	2.06	5
20	Norway	2	2.06	5

21	Pakistan	2	2.06	5
22	Peru	1	1.03	5
23	Poland	1	1.03	7
24	Portugal	1	1.03	6
25	Romania	1	1.03	6
26	Russian Federation	1	1.03	6
27	Singapore	1	1.03	6
28	Slovakia	1	1.03	6
29	Slovenia	1	1.03	6
30	Spain	1	1.03	6
31	Switzerland	1	1.03	6
32	Turkey	1	1.03	6
33	Ukraine	1	1.03	6
34	United Kingdom	1	1.03	6
35	United States	1	1.03	6
36	Venezuela, Bolivarian Republic of	1	1.03	6
Total		94	100	/

Clearly depicts that the publishers of e-journals on Zoology is published in 36 countries. Argentina publishers more and Rank with 10 open access journals published for the Argentina (10.3%) in 2nd Rank with 8 e-journals Bolivia, Plurinational State of (8.24) in 3rd Rank with 5 e-journals, Brazil (5,15%) in 4th Rank with 4 e-journals, Bulgaria ,china Colombia Croatia, Egypt, chin Macedonia, the Former Yugoslav Republic, Poland, Serbia(3.09%) in 5th Rank with 2 e-journals, It is clear from the table Argentina, Bosnia and Italy Spain Portugal Republic, France, Hungary, Portugal, Slovenia, Ukraine, Netherlands Peru(1.03%) in Seam Rank of Publishers open access E-journal in the field of zoology.

FINDINGS:

1. More e-journals are Started publishing in Doaj in 2010, in this year 12 e-journals Started publishing in DOAJ.

2. They are 1st no. Zoology science, Second no Agriculture [Agriculture (General), Agriculture Agriculture, Third no is Agriculture Economic Agriculture Agriculture (General) Aquaculture. Fisheries. Angling, Agriculture, Zoology fourth No is, Science Biology (General), Science.
3. Clearly depicts that the publishers of e-journals on Zoology is published in 36 countries. Argentina publishers more and Rank with 10 open access journals published for the Argentina (10.3%) in 2nd Rank with 8 e-journals Bolivia, Plurinational State of (8.24) in 3rd Rank with 5 e-journals, Brazil (5,15%) in 4th Rank with 4 e-journals, Bulgaria, China Colombia Croatia, Egypt, Macedonia, the Former Yugoslav Republic, Poland, Serbia (3.09%) in 5th Rank with 2 e-journals, It is clear from the table Argentina, Bosnia and Italy Spain Portugal Republic, France, Hungary, Portugal, Slovenia, Ukraine, New Zealand Peru (1.03%) in 6th Rank of Publishers open access E-journal in the field of zoology.

CONCLUSION - The open-access movement has improved information accessibility and its usage. Now a day it is achieving more and more attention. The outcome of the present study brings to light that DOAJ promotes access to 94 open access journals of Zoology.

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