

[1]赵景波,刘晓青,徐娜.渭河眉县段高河漫滩沉积与洪水变化研究[J].自然灾害学报,2010,03:119-125.

ZHAO JING-bo,LIU Xiao-qing,XU Na.A study on flood series recorded by sediments in high alluvial flat along the Meixian reach of Weihe River[J].,2010,03:119-125.

[点击复制](#)

渭河眉县段高河漫滩沉积与洪水变化研究(PDF)

《自然灾害学报》[ISSN:/CN:23-1324/X] 期数: 2010年03期 页码: 119-125 栏目: 出版日期: 2010-03-01

Title: A study on flood series recorded by sediments in high alluvial flat along the Meixian reach of Weihe River

作者: [赵景波^{1, 2}](#); [刘晓青³](#); [徐娜¹](#)

1. 陕西师范大学, 旅游与环境学院, 陕西 西安 710062;
2. 中国科学院地球环境研究所黄土与第四纪地质国家重点实验室, 陕西 西安 710075;
3. 陕西省环境科学研究设计院, 陕西 西安 710061

Author(s): [ZHAO JING-bo^{1, 2}](#); [LIU Xiao-qing³](#); [XU Na¹](#)

1. College of Tourism and Environment Science, Shaanxi Normal University, Xi' an 710062, China;
2. State Key Laboratory of Loess and Quaternary Geology, Environment Institute of Earth, CAS, Xi' an 710075, China;
3. Institute of Research and Design on Environmental Sciences in Shaanxi Province, Xi' an 710061, China

关键词: [洪水变化](#); [变化周期](#); [渭河沉积](#); [关中平原](#); [眉县](#)

Keywords: [flood change](#); [change period](#); [sediment of Weihe River](#); [Guanzhong Plane](#); [Meixian County](#)

分类号: P344

DOI: -

文献标识码: -

摘要: 根据粒度指标和历史文献记录,研究了渭河洪水的变化。眉县河漫滩沉积剖面共分为16个沉积层,指示至少发生了16次大小不同的洪水。剖面最上层为2005年大洪水沉积,其它15层是约近120年的洪水沉积层。在考虑了沉积厚度引起地形增高对粒度成分的影响之后,可以确定这16个阶段洪水深度和规模由大到小的变化顺序为:第15阶段>第12阶段>第13阶段>第16阶段>第14阶段>第9阶段>第10阶段>第11阶段>第4阶段>第1阶段>第2阶段>第6阶段>第5阶段>第7阶段>第8阶段>第3阶段。其中第12,15,13,16,14,9,10,11,4,1阶段为大洪水,第2,3,5,6,7,8阶段为常遇洪水。渭河大洪水的形成主要是由于年降雨量的增加,其次是由于短时间的暴雨造成的。历史文献资料的统计和软件计算表明,眉县渭河洪水发生具有11年和2~7年的周期,分别与太阳活动的11年周期和热带海洋地区的ENSO周期相对应。近400年来,渭河地区洪水的频次变化与太阳黑子数以及我国东部地区的温度变化在几十年尺度上呈近似反相关关系,在太阳黑子数多的时期,我国东部地区温度较高,关中渭河地区洪水发生频次较少。

Abstract: Flood changes of Weihe River was studied on the basis of grain size analysis and

[导航/NAVIGATE](#)

[本期目录/Table of Contents](#)

[下一篇/Next Article](#)

[上一篇/Previous Article](#)

[工具/TOOLS](#)

[引用本文的文章/References](#)

[下载 PDF/Download PDF\(918KB\)](#)

[立即打印本文/Print Now](#)

[推荐给朋友/Recommend](#)

[统计/STATISTICS](#)

[摘要浏览/Viewed](#) 210

[全文下载/Downloads](#) 103

[评论/Comments](#)



historical records. The profile of the alluvial flat in Meixian reach of Weihe River can be divided into 16 layers, which suggests that 16 floods have happened. The uppermost layer of the profile represents the flood occurring in 2005 A.D., whereas the other 15 layers indicate other 15 floods occurring in recent 120 years. Considering the influence of terrain elevation increment by alluvial on the composition of grain size, it is concluded that the order of flood scale is: 15th > 12th > 13th > 16th > 14th > 9th > 10th > 11th > 4th > 1st > 2nd > 6th > 5th > 7th > 8th > 3rd. The 15th, 12th, 13th, 16th, 14th, 9th, 10th, 11th, 4th, 1st ones were rare flood, whereas the 2nd, 3rd, 5th, 6th, 7th, 8th ones were frequent floods. The formation of severe floods is mostly attributed to annual precipitation's increase, and secondly to concentrated rainstorms precipitation in a short time. It is indicated by statistics of historical literatures and calculations of professional softwares that there are periods about 11 years and 2-7 years for flood occurrence, which correspond with solar activities and ENSO. The time series of the flood in Weihe River Basin seem to have an inverse correlation with series of sunspots and temperature series of east region in China in decades: an increase of the number of sunspots often correspond with an increase in the temperature, but a decrease of floods in Weihe River Basin.

参考文献/REFERENCES

- [1] 王春丽,邢俊江,王明洁.暴雨山洪灾害成因及预报方法[J].自然灾害学报,2006,15(4):65-70.
- [2] 熊治平.我国江河洪灾成因与减灾对策探讨[J].中国水利,2004,(7):41-42.
- [3] 张琼华,赵景波.近50 a渭河流域洪水成因分析及灾害防治[J].中国沙漠,2006,26(1):117-121.
- [4] 张艳玲.陕西省渭河流域水文特性分析[J].西北水资源与水工程,2002,13(2):62-64.
- [5] 蒋昕晖,霍世青,刘龙庆,等.2003年渭河洪水特性分析[J].人民黄河,2004,26(1):24-27.
- [6] 向立云.洪水灾害特性变化分析[J].水利发展研究,2002,12(2):44-47.
- [7] 吴强,杨晋芳,李建成.2003年渭河洪水的特点及治理对策[J].西北水电,2004,(1):4-8.
- [8] 邢大韦,张玉芳,粟晓玲.对2003年陕西渭河洪水的思考[J].水利与建筑工程学报,2004,2(1):1-4.
- [9] Dionysia P. Sensitivity of flood events to global climate change[J]. Journal of Hydrology, 1997, 191: 208-222.
- [10] Thorndycraft VR, Benito G. Late Holocene fluvial chronology in Spain: the role of climatic variability and human impact[J]. Catena, 2006, 66: 34-41.
- [11] James C. Sensitivity of modern and Holocene floods to climate change[J]. Quaternary Science Review, 2001, 19: 439-457.
- [12] Allens. Gottesfeld. British Columbia flood scars: maximum flood-stage indicators[J]. Geomorphology, 1996, 14: 319-325.
- [13] Macklin MG, Benito G, Gregory K J, et al. Past hydrological events reflected in the Holocene fluvial record of Europe[J]. Catena, 2006, 66: 145 - 154.
- [14] 陕西师范大学地理系. 陕西省宝鸡市地理志[M]. 西安: 陕西人民出版社, 1986
- [15] 高陵县地方志编纂委员会. 高陵县志[M]. 西安: 陕西人民出版社, 2000.
- [16] 谢又予. 沉积地貌分析[M]. 北京: 海洋出版社, 2000: 3-4.
- [17] 赵景波, 李胜利. 西安高陵马坊滩渭河洪水变化研究[J]. 沉积学报, 2006, 24(6): 857-863
- [18] 蔺建军, 向立云. 渭河下游"05.10"洪水灾害减轻原因浅析[J]. 人民黄河, 2006, 10(28): 27-30.
- [19] 熊治平. 江河防洪概论[M]. 武汉: 武汉大学出版社, 2005. 69-70
- [20] 张育生. 渭河流域洪水分析[J]. 甘肃水利水电技术, 2005, 4(41): 345-346.
- [21] 袁林. 西北灾荒史[M]. 兰州: 甘肃人民出版社, 1994: 619-954
- [22] 刘晓清, 赵景波, 于学峰. 清代泾河中游地区洪涝灾害研究[J]. 地理科学. 2007, 27(3): 445-448
- [23] Ge Q, Zheng, J. Fang, X. et al. Winter half-year temperature reconstruction for the middle and lower reaches of the Yellow River and Yangtze River, China, during the past 2000 years[J]. The Holocene. 2003, 13(6): 933-940.

备注/Memo: 收稿日期:2008-12-8;改回日期:2009-10-15。

基金项目:国家自然科学基金资助项目(40571004);中科院黄土与第四纪地质国家重点实验室项目(SKLLQG0705)

作者简介:赵景波(1953-),男,教授,博士,博士生导师,主要从事第四纪与自然地理研究.E-mail:zhaobjb@snnu.edu.cn
