

Figure A1. Approximate Nesting, Winter, and Primary Migration Staging Areas of the Six Migratory Sandhill Crane Populations (USFWS, 2018)

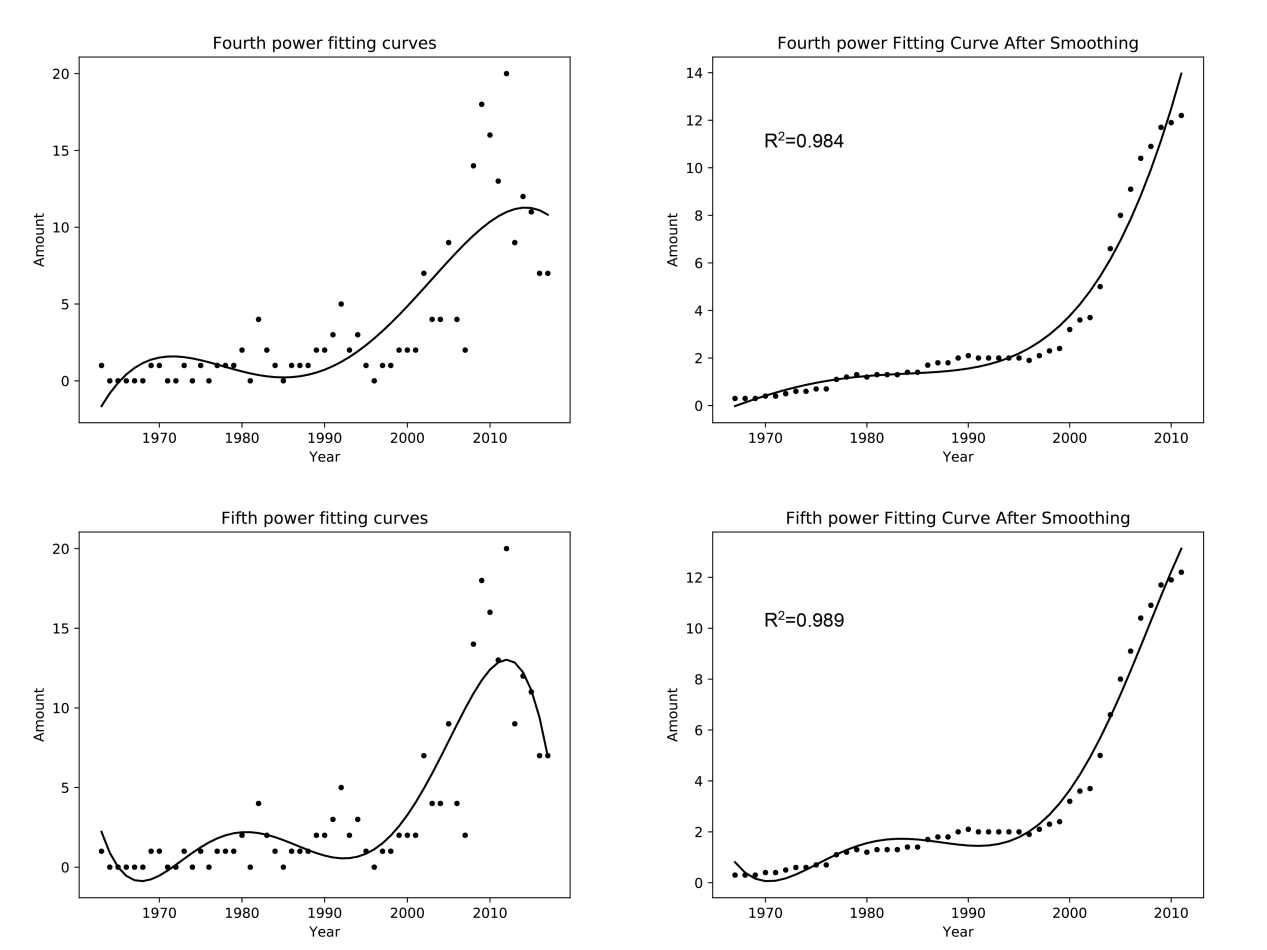


Figure A2. The scatter plot of the number of the sandhill crane in Asia in the past half century and its fourth and fifth fitting curve before and after doing simple Mean-value filter.

Table A1 Data source table

The location of sandhill cranes that appeared in East Asia during the last half a century and their corresponding reference

|  |  |  |
| --- | --- | --- |
| Time | Location | Reference |
| 1963-1964 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1969-1970 | Kushiro, Hokkaido, Japan | Masatomi, 1972 |
| 1970-1971 | Yancheng, Jiangsu, China | Wang, 2006 |
| 1973-1974 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1975-1976 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1977-1978 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1978-1979 | Shuyang, Jiangsu, China | Kuang *et al.*, 1981 |
| 1979-1980 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1980-1981 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1982-1983 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1983-1984 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1984-1985 | Poyang Lake, Jiangxi, China | Liu & Ding, 1988 |
| 1986-1987 | Poyang Lake, Jiangxi, China | Qian, 2005 |
| 1987-1988 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1988-1989 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1989-1990 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1990-1991 | Yellow River Delta Nature Reserve, Shandong, China | Wang, 2006 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1991-1992 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1992-1993 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1993-1994 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| 1994-1995 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1995-1996 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1997-1998 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1998-1999 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 1999-2000 | Yellow River Wetland National Nature Reserve, Henan, China | Bird Talker, 2018 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| 2000-2001 | Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 2001-2002 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| 2002-2003 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Zhalong National Nature Reserve, Heilongjiang, China | Ma, 2003 |
| 2003-2004 | Poyang Lake, Jiangxi, China | Wang, 2006 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| 2004-2005 | Izumi, Kagoshima, Japan | GBIF, 2017 |
| Shanghai, China | Bird Talker, 2018 |
| Shanghai, China | Bird Talker, 2018 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| 2005-2006 | Chungcheongnam, Korea | GBIF, 2017 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Chongming Dongtan Nature Reserve, Shanghai, China | Cai *et al.*, 2011 |
| Suncheon Bay Wetland, Suncheon, Jeonnam, Korea | Naver Blog, 2006 |
| Nanjing, Jiangsu, China | Bird Talker, 2018 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Talker, 2018 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Talker, 2018 |
| Chongming Dongtan Nature Reserve, Shanghai, China | Bosma, 2017 |
| 2006-2007 | Yellow River Delta Nature Reserve, Shandong, China | Wang *et al.*, 2007 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| 2007-2008 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| 2008-2009 | Izumi, Kagoshima, Japan | GBIF, 2017 |
| Zhalong National Nature Reserve, Heilongjiang, China | Cheng et al., 2014 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | This paper |
| Kagoshima, Japan | Bird Fan, 2014 |
| 2009-2010 | Xinqing Wetland, Yichun, Jilin, China | This paper |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Talker, 2018 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Talker, 2018 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Momoge National Nature Reserve, Jilin, China | Yu *et al.*, 2011 |
| Xinqing Wetland, Yichun, Jilin, China | Ifeng, 2010 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Talker, 2018 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Talker, 2018 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | This paper |
| Shanghai, China | Bird Talker, 2018 |
| Shanghai, China | Bird Talker, 2018 |
| Kagoshima, Japan | Bird Fan, 2014 |
| Izumi, Kagoshima, Japan | This paper |
| 2010-2011 | Izumi, Kagoshima, Japan | GBIF, 2017 |
| Sheyang, Yancheng, Jiangsu, China | GBIF, 2017 |
| Sheyang, Yancheng, Jiangsu, China | GBIF, 2017 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Cheng et al., 2014 |
| Chongming Dongtan Nature Reserve, Shanghai, China | Cheng et al., 2014 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Talker, 2018 |
| Chongming Dongtan Nature Reserve, Shanghai, China | Bird Talker, 2018 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Talker, 2018 |
| Chongming Dongtan Nature Reserve, Shanghai, China | Bird Talker, 2018 |
| Zhengzhou, Henan, China | Bosma, 2017 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Talker, 2018 |
| Sheyang, Yancheng, Jiangsu, China | Bird Talker, 2018 |
| 2011-2012 | Chongming Dongtan Nature Reserve, Shanghai, China | GBIF, 2017 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Cheng et al., 2014 |
| Chongming Dongtan Nature Reserve, Shanghai, China | Cheng et al., 2014 |
| Momoge National Nature Reserve, Jilin, China | Cheng et al., 2014 |
| Zhalong National Nature Reserve, Heilongjiang, China | This paper |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Talker, 2018 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Cheolwon, Gangwon, Korea | GBIF, 2017 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | This paper |
| Ibaraki, Japan | Bird Fan, 2014 |
| Ibaraki, Japan | Bird Fan, 2014 |
| 2012-2013 | Izumi, Kagoshima, Japan | GBIF, 2017 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Cheng et al., 2014 |
| Chongming Dongtan Nature Reserve, Shanghai, China | Cheng et al., 2014 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | This paper |
| Cheolwon, Gangwon, Korea | Kwnews, 2012 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Talker, 2018 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Talker, 2018 |
| Shanghai, China | Bosma, 2017 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Guanzidong wetland, Liaoning, China | Cheng et al., 2014 |
| Lianyungang, Jiangsu, China | Bird Talker, 2018 |
| Sheyang, Yancheng, Jiangsu, China | Bird Talker, 2018 |
| Kagoshima, Japan | Bird Fan, 2014 |
| Kagoshima, Japan | Bird Fan, 2014 |
| Kagoshima, Japan | Bird Fan, 2014 |
| 2013-2014 | Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | This paper |
| Miyun Reservoir, Beijing | Cheng et al., 2014 |
| Yancheng, Jiangsu, China | This paper |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Talker, 2018 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Yancheng, Jiangsu, China | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Kagoshima, Japan | This paper |
| 2014-2015 | Cheolwon, Gangwon, Korea | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Yellow River Delta Nature Reserve, Shandong, China | Ifeng, 2014 |
| Tangshan, Hebei, China | Huanbohainews, 2014 |
| Zhalong National Nature Reserve, Heilongjiang, China | This paper |
| Kagoshima, Japan | Bird Fan, 2014 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | This paper |
| 2015-2016 | Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Izumi, Kagoshima, Japan | GBIF, 2017 |
| Caizi Lake, Anhui, China | This paper |
| Zhalong National Nature Reserve, Heilongjiang, China | This paper |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Chungcheongnam, Korea | GBIF, 2017 |
| 2016-2017 | Suncheon Bay Wetland, Suncheon, Jeonnam, Korea | Fun World, 2016 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Report, 2016 |
| Yancheng National Wetland Nature Reserve for Rare Birds, Jiangsu, China | Bird Report, 2016 |
| Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |
| Suncheon Bay Wetland, Suncheon, Jeonnam, Korea | News1 |
| 2017-2018 | Izumi, Kagoshima, Japan | Crane Park Izumi, 2017 |

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