

Appendix C. Water Balance Graphs

- Figure C-1. Historical water withdrawals and returns from USGS gage 03341500.
- Figure C-2. Historical water withdrawals and returns from USGS gage 03342000.
- Figure C-3. Historical water withdrawals and returns from USGS gage 03342500.
- Figure C-4. Historical water withdrawals and returns from USGS gage 03343010.
- Figure C-5. Historical water withdrawals and returns from USGS gage 03345500.
- Figure C-6. Historical water withdrawals and returns from USGS gage 03346500.
- Figure C-7. Historical water withdrawals and returns from USGS gage 03359000.
- Figure C-8. Historical water withdrawals and returns from USGS gage 03360000.
- Figure C-9. Historical water withdrawals and returns from USGS gage 03360500.
- Figure C-10. Historical water withdrawals and returns from USGS gage 03371500.
- Figure C-11. Historical water withdrawals and returns from USGS gage 03372500.
- Figure C-12. Historical water withdrawals and returns from USGS gage 03373500.
- Figure C-13. Historical water withdrawals and returns from USGS gage 03374000.
- Figure C-14. Historical water withdrawals and returns from USGS gage 03374100.
- Figure C-15. Historical water withdrawals and returns from USGS gage 03375500.
- Figure C-16. Historical water withdrawals and returns from USGS gage 03376300.
- Figure C-17. Historical water withdrawals and returns from USGS gage 03376500.
- Figure C-18. Historical water withdrawals and returns from USGS gage 03377500.
- Figure C-19. Historical water withdrawals and returns from USGS gage 03378000.
- Figure C-20. Historical water withdrawals and returns from USGS gage 03378500.
- Figure C-21. Historical water withdrawals and returns from the Lower Wabash catchment.

Appendix to:

Southwest Indiana Regional Water Study

Letsinger, S.L., Gustin, A.R., Waddle, R.C., Petty, A.E., and Durai, R.S., 2026. Regional water study: Water Demand and Availability in Southwest Indiana. Report to Indiana Finance Authority. 145 p.

<https://www.in.gov/ifa/regional-water-studies/southwest-indiana-regional-water-study>

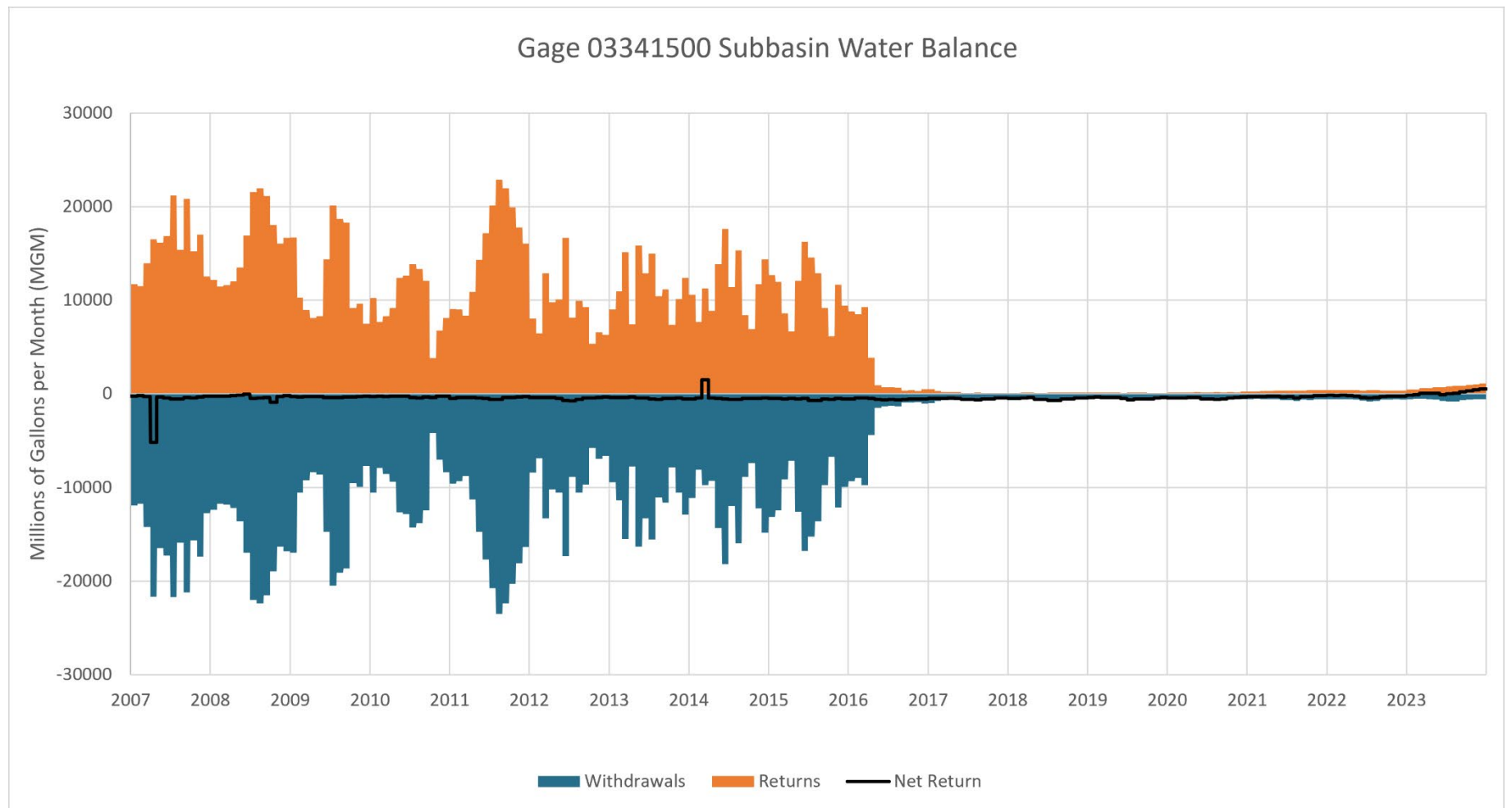
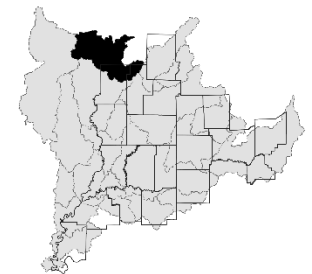


Figure C-1: Historical water withdrawals and returns from USGS gage 03341500 in the Wabash River Basin. The decline in withdrawals and returns in 2016 is due to the closure of the Wabash Valley coal-fired power plant.



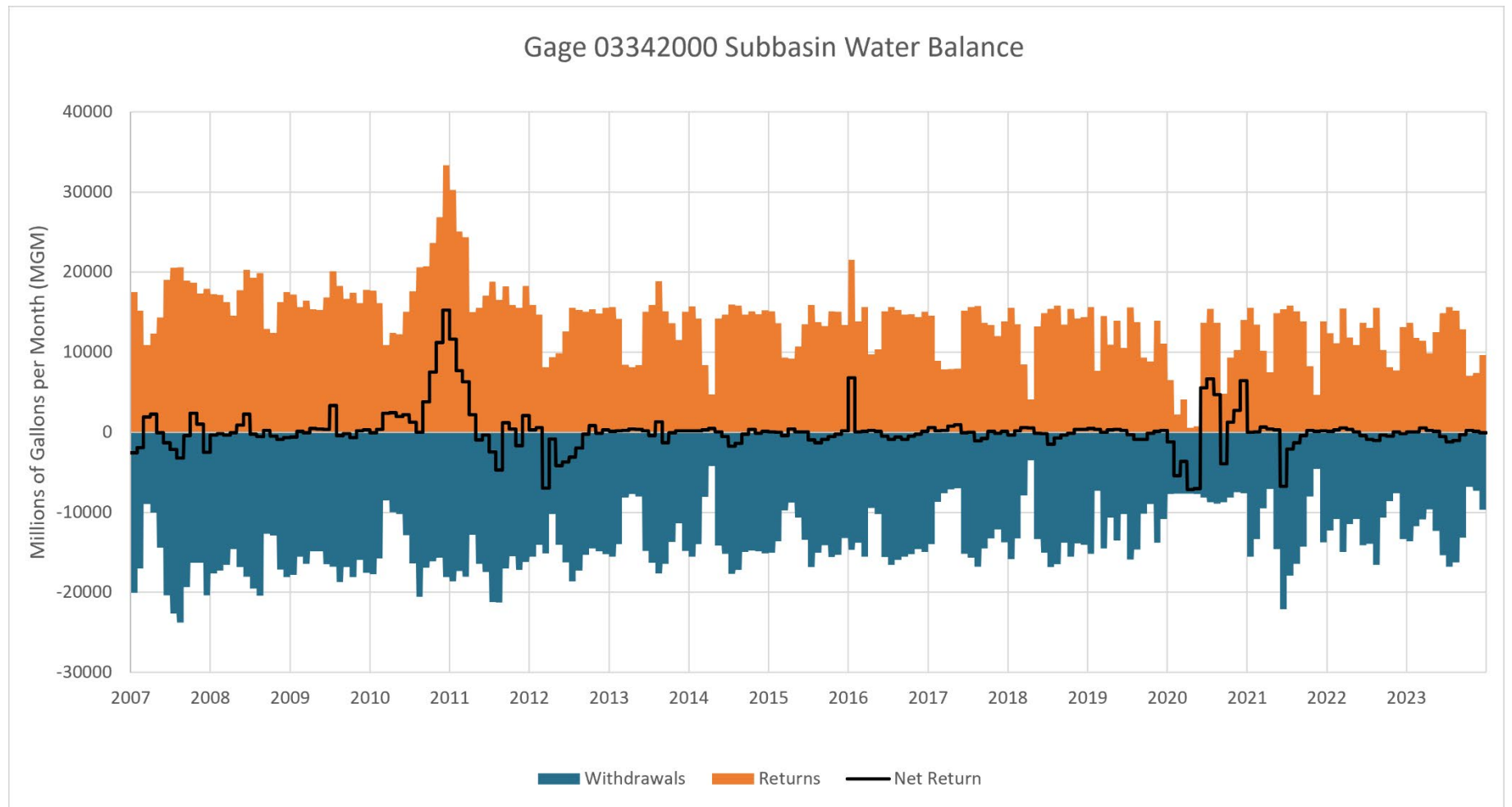


Figure C-2: Historical water withdrawals and returns from USGS gage 03342000 in the Wabash River Basin. The increase of returns at the end of 2011 is from the Merom Generating station.



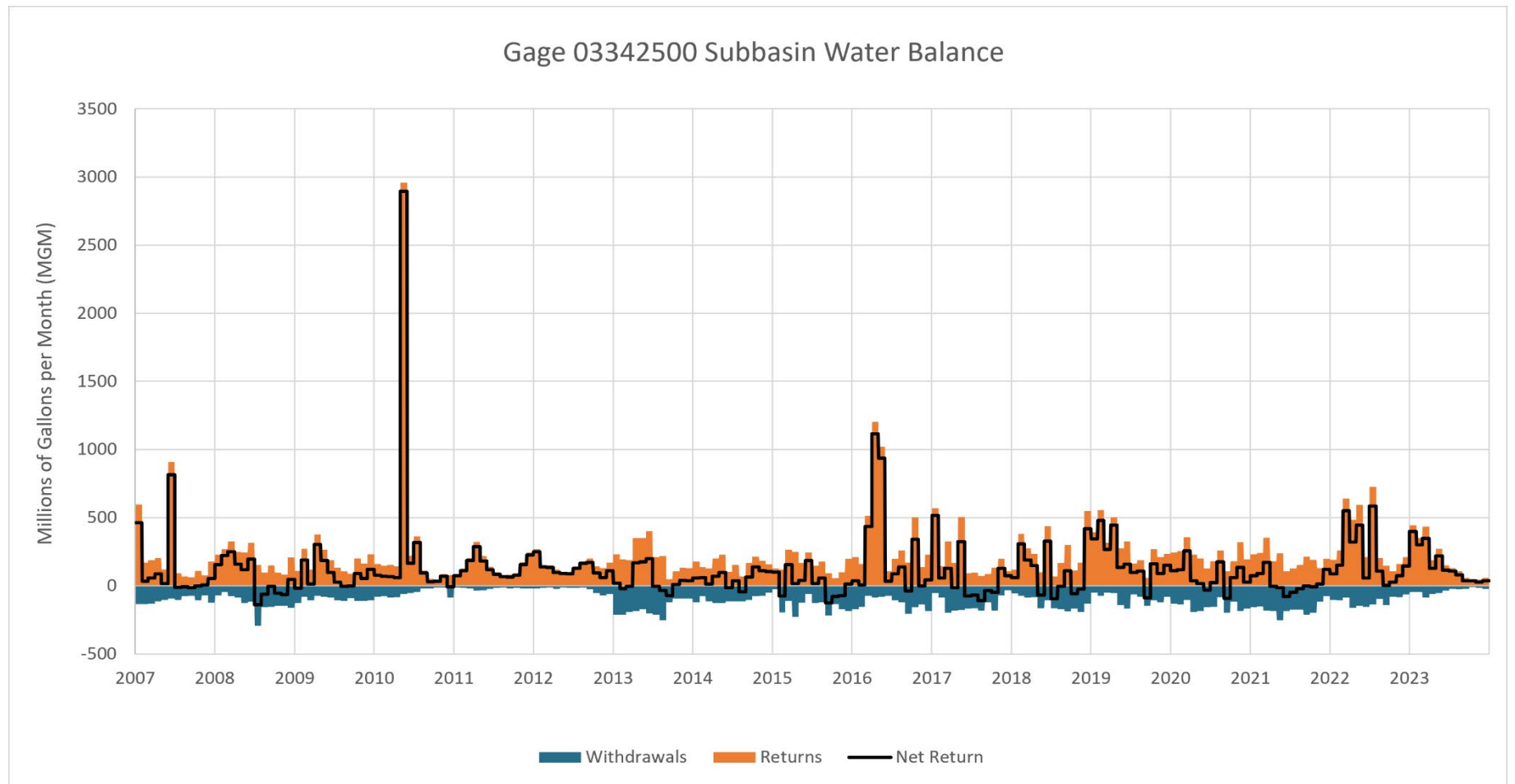


Figure C-3: Historical water withdrawals and returns from USGS gage 03342500 in the Wabash River Basin. The return spike in 2010 is from the Sullivan North mine. Alterations in groundwater flow from mines in the area cause the returns to consistently dominate withdrawals.



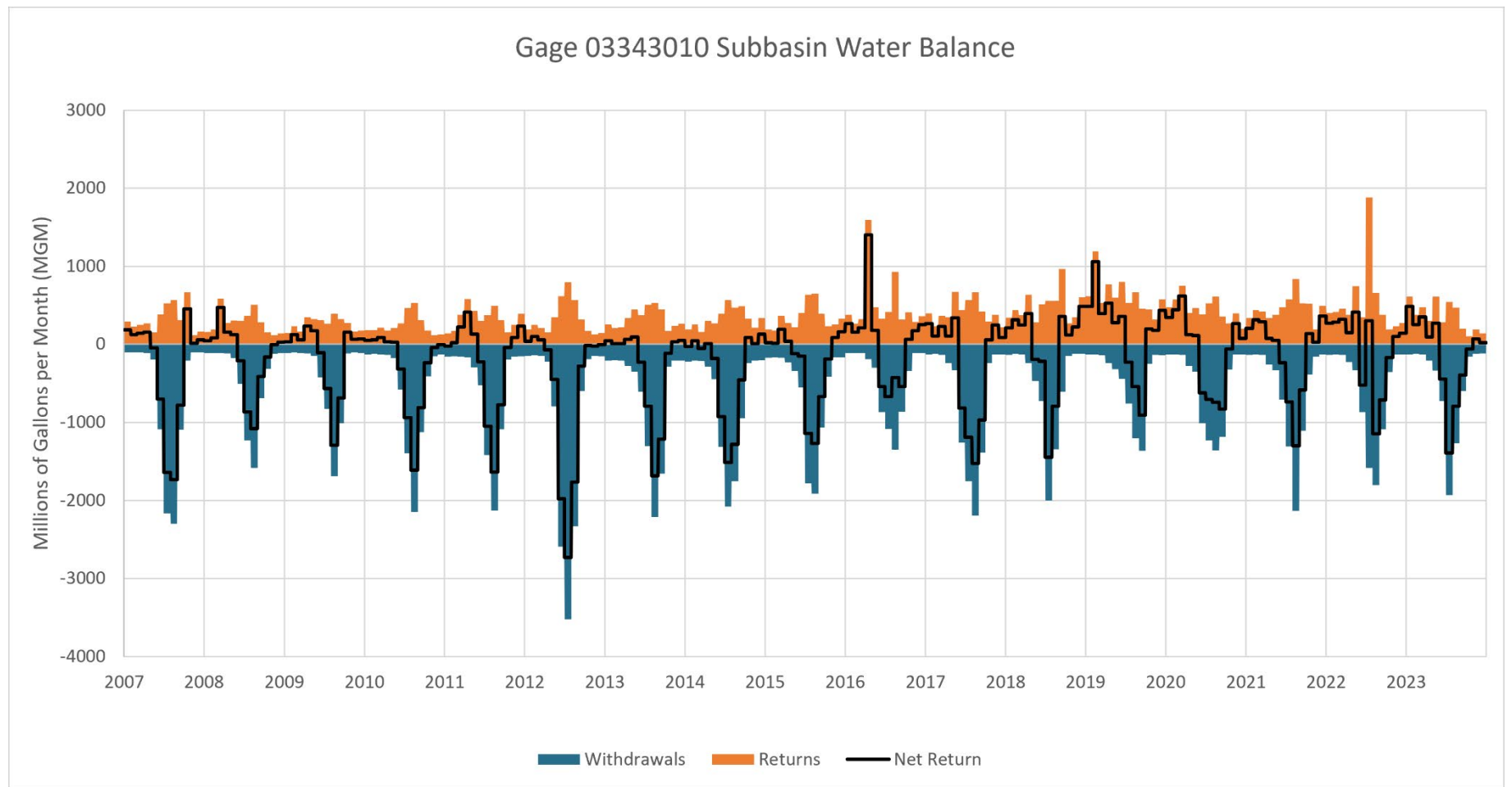


Figure C-4: Historical water withdrawals and returns from USGS gage 03343010 in the Wabash River Basin. Two coal mines and irrigation returns are the main sources of return flow. The seasonal withdrawal signals shown here are predominantly due to agricultural irrigation.



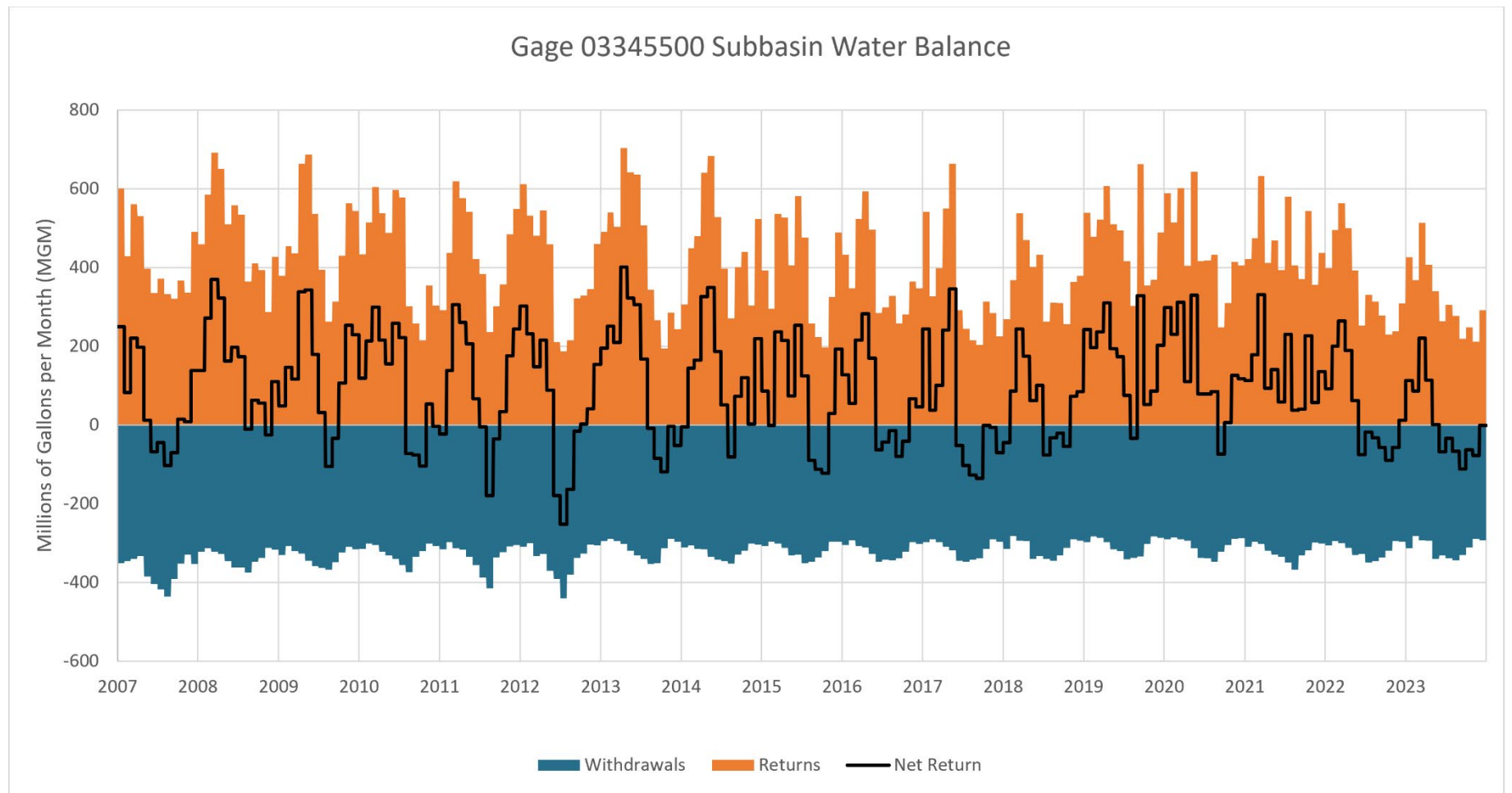


Figure C-5: Historical water withdrawals and returns from USGS gage 03345500 in the Wabash River Basin. The slight imbalance of excess returns is presumed to be caused by the large rural utility EJ Water Cooperative and the City of Champaign who both sell water in this subbasin that is sourced outside of the study area. Combined storm sewer overflow returned at municipality WWTPs may also be a contributing factor.



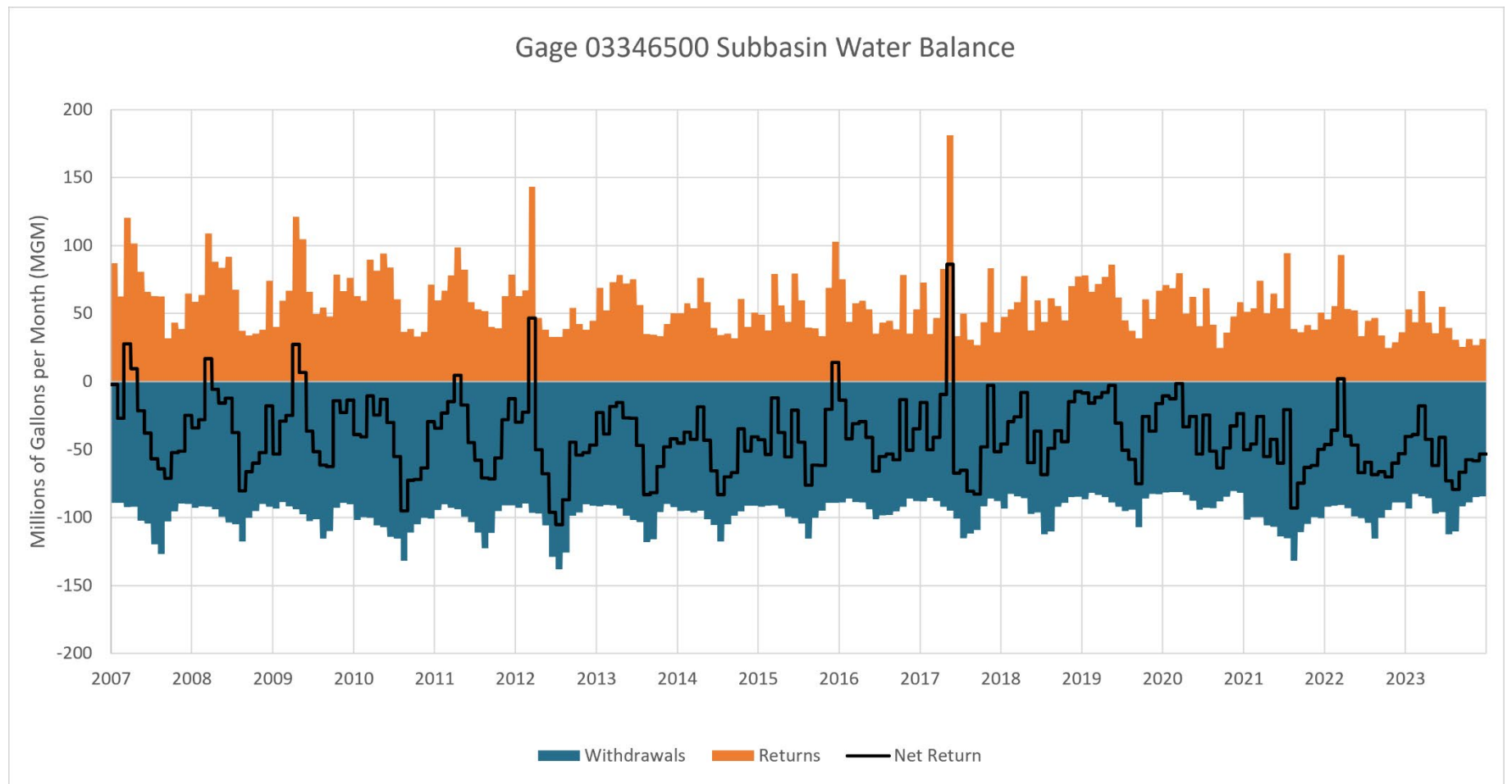


Figure C-6: Historical water withdrawals and returns from USGS gage 03346500 in the Wabash River Basin. There is slightly more withdrawals than returns due to seasonal irrigation and utility pumping.



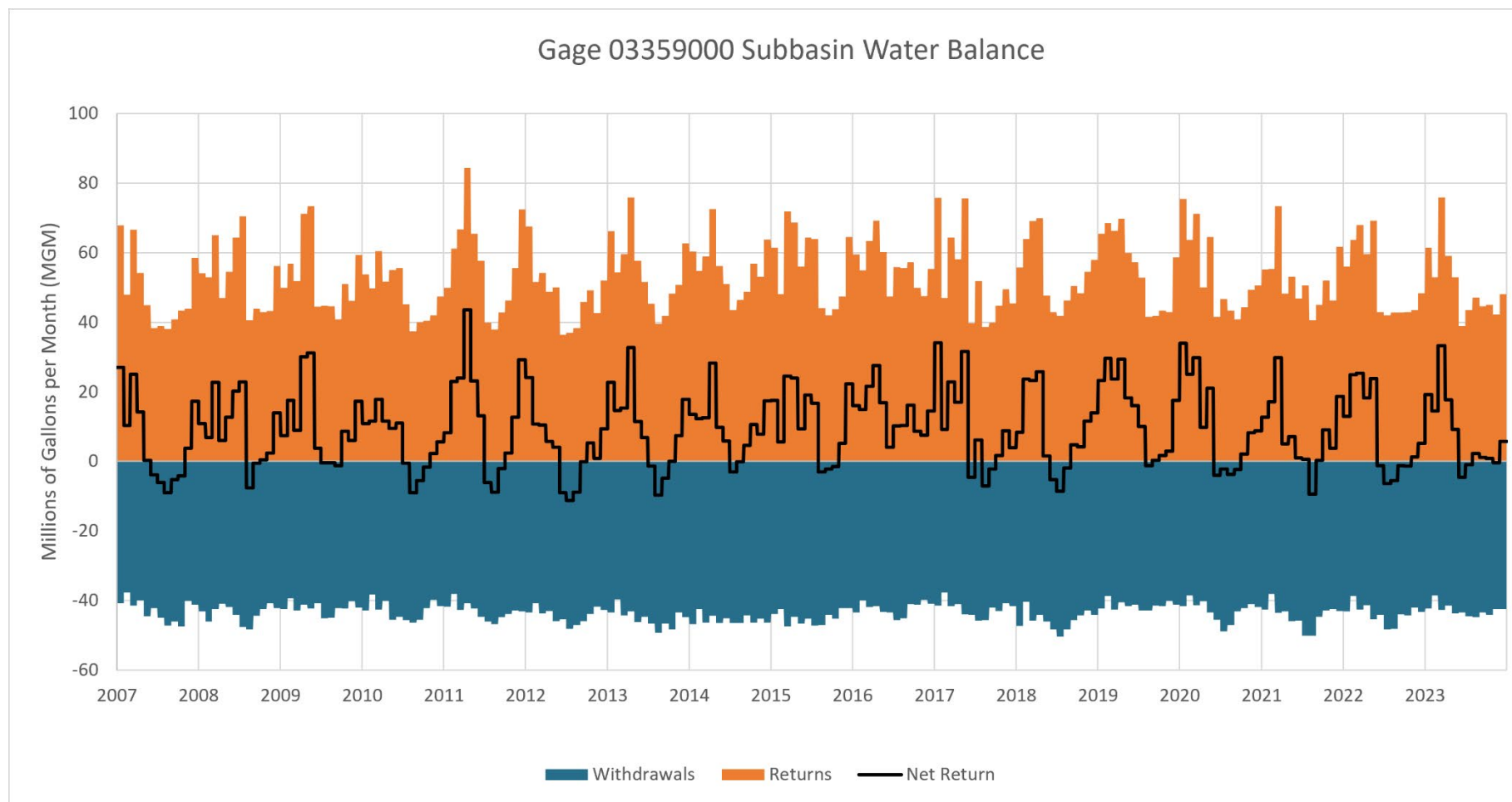


Figure C-7: Historical water withdrawals and returns from USGS gage 03359000 in the White River Basin. The Cloverdale WWTP is the source of the slight imbalance, which could possibly be caused by some stormwater runoff being collected and treated alongside wastewater.



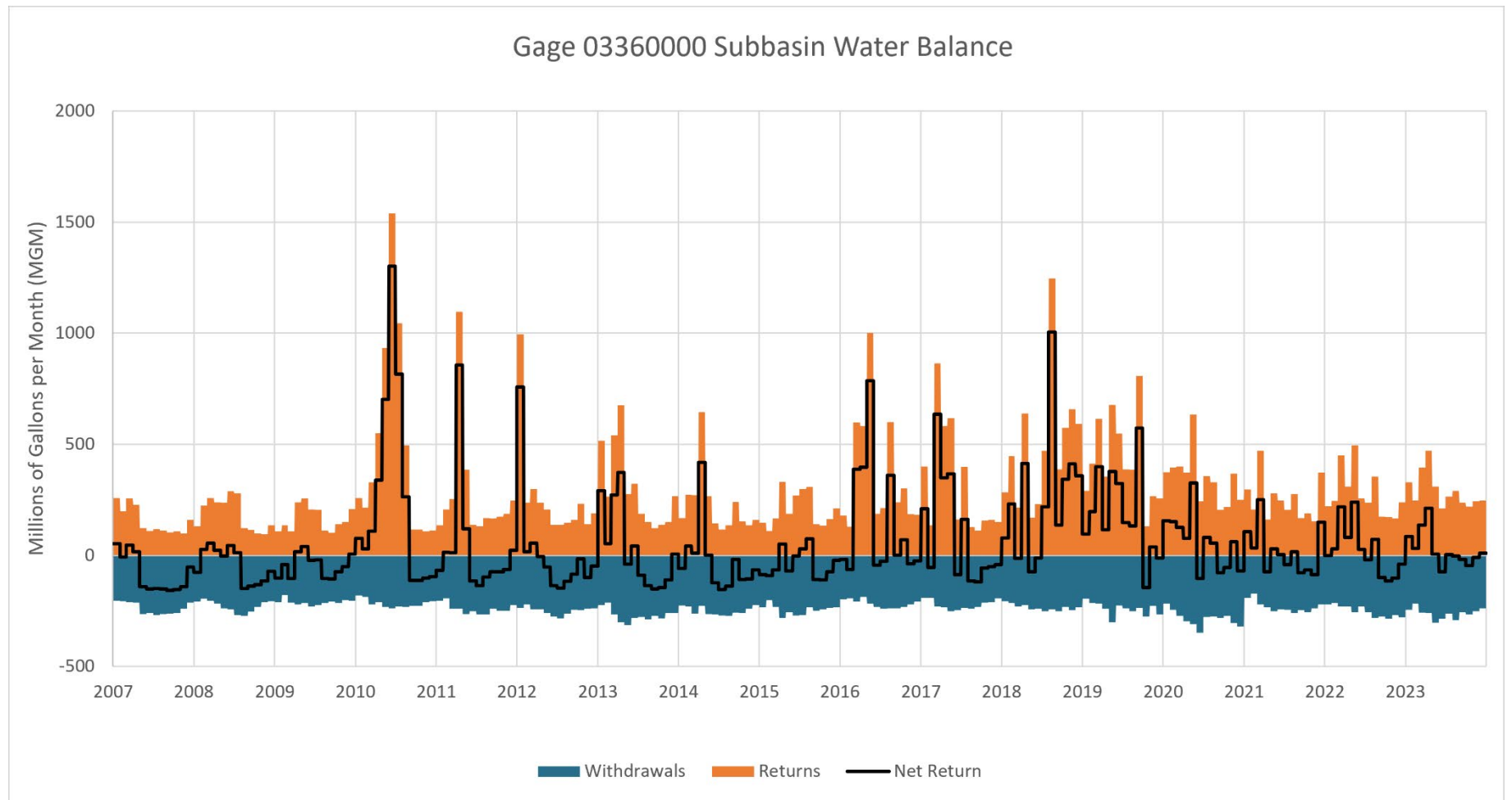


Figure C-8: Historical water withdrawals and returns from USGS gage 03360000 in the White River Basin. Excessive returns are attributed to two gravel quar altered groundwater flow.



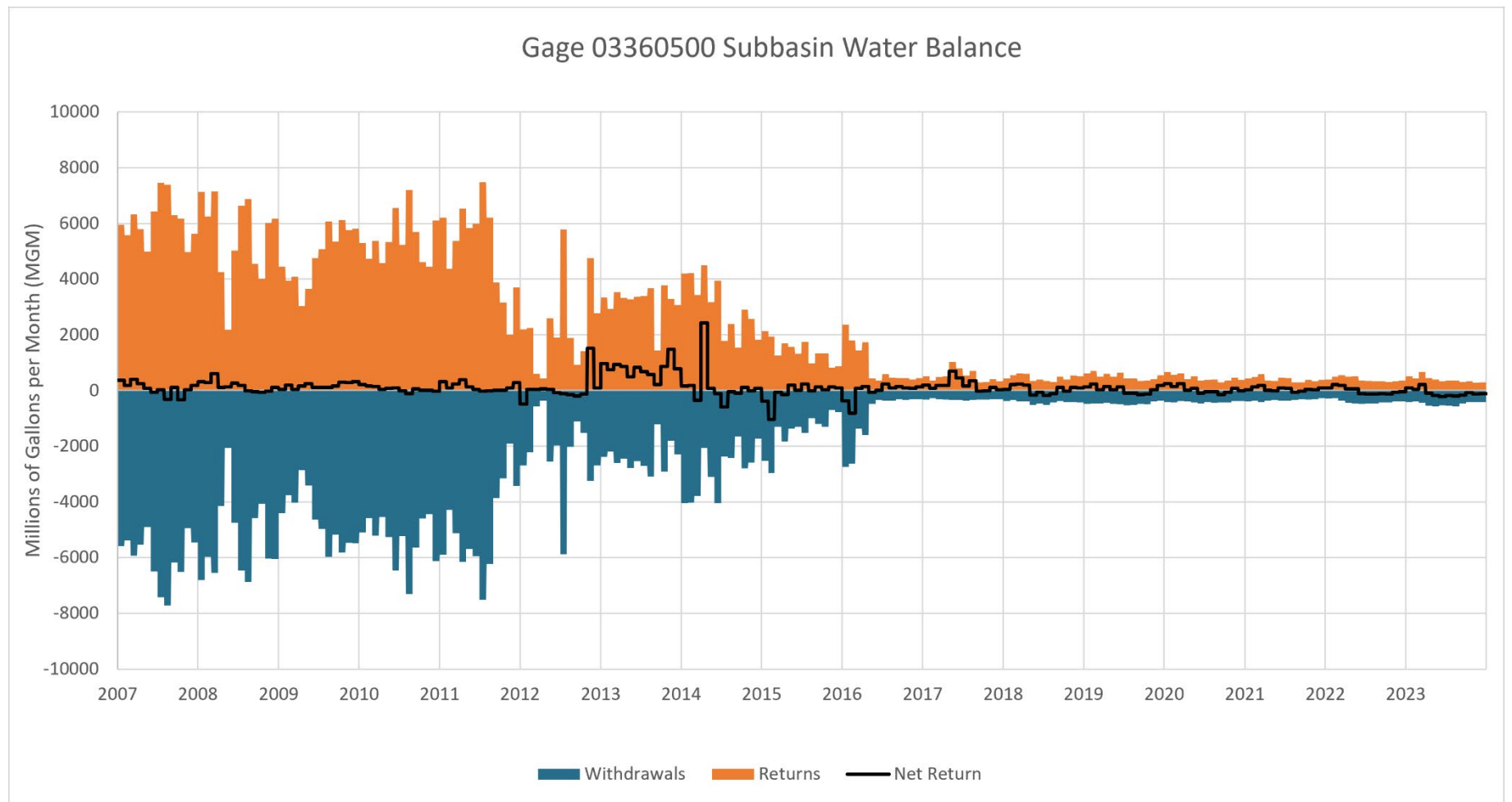


Figure C-9: Historical water withdrawals and returns from USGS gage 03360500 in the White River Basin. The decrease in water withdrawals and returns in 2016 is from the Eagle Valley Generating Station changing fuel sources from coal to natural gas. The decline in usage starting in 2012 is also from Eagle Valley, possibly when they began to dismantle their coal plant.



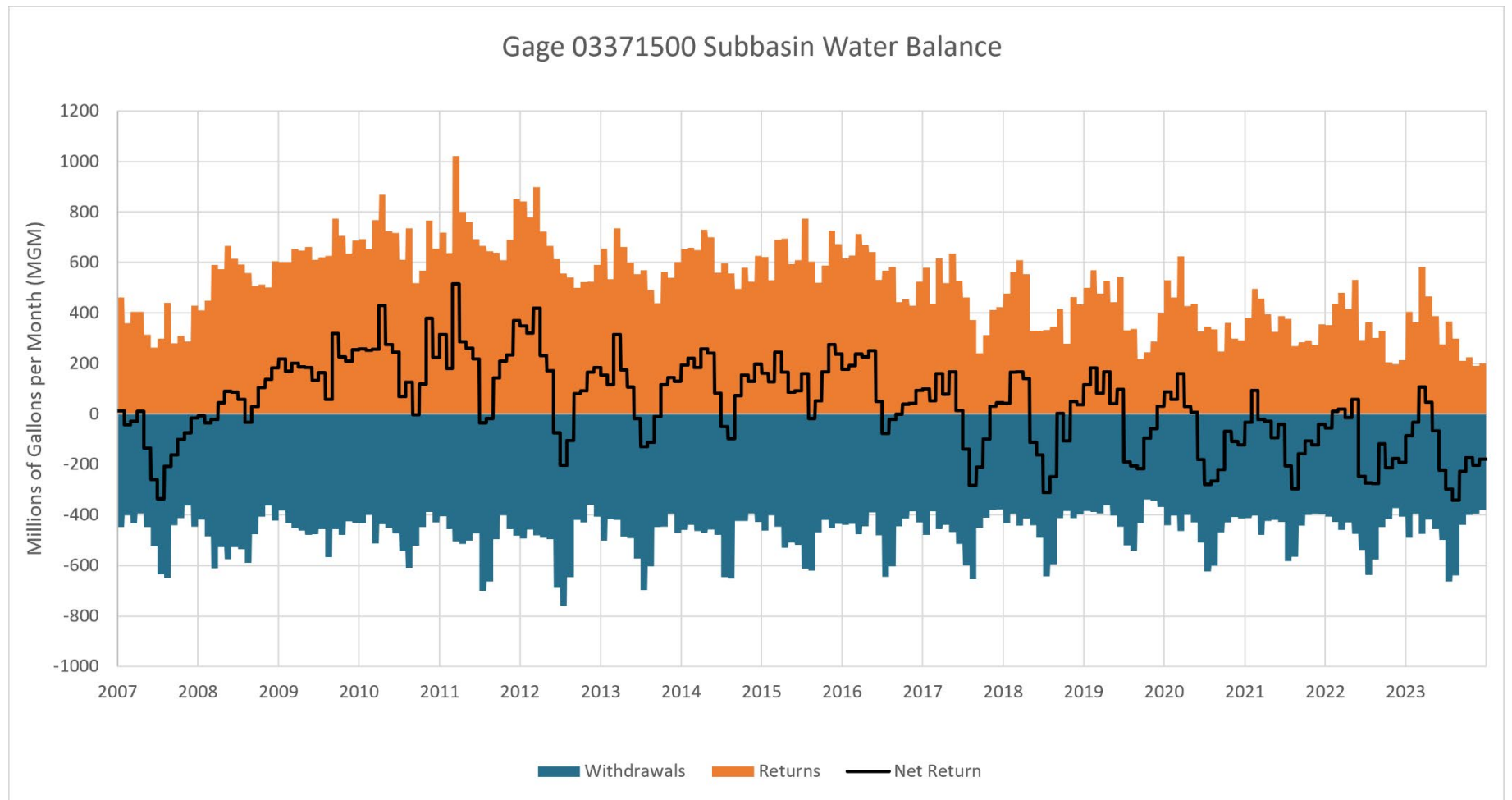


Figure C-10: Historical water withdrawals and returns from USGS gage 03371500 in the East Fork White River Basin. The imbalance of return flows from 2009-2016 is caused by stone quarries and altered groundwater flow.



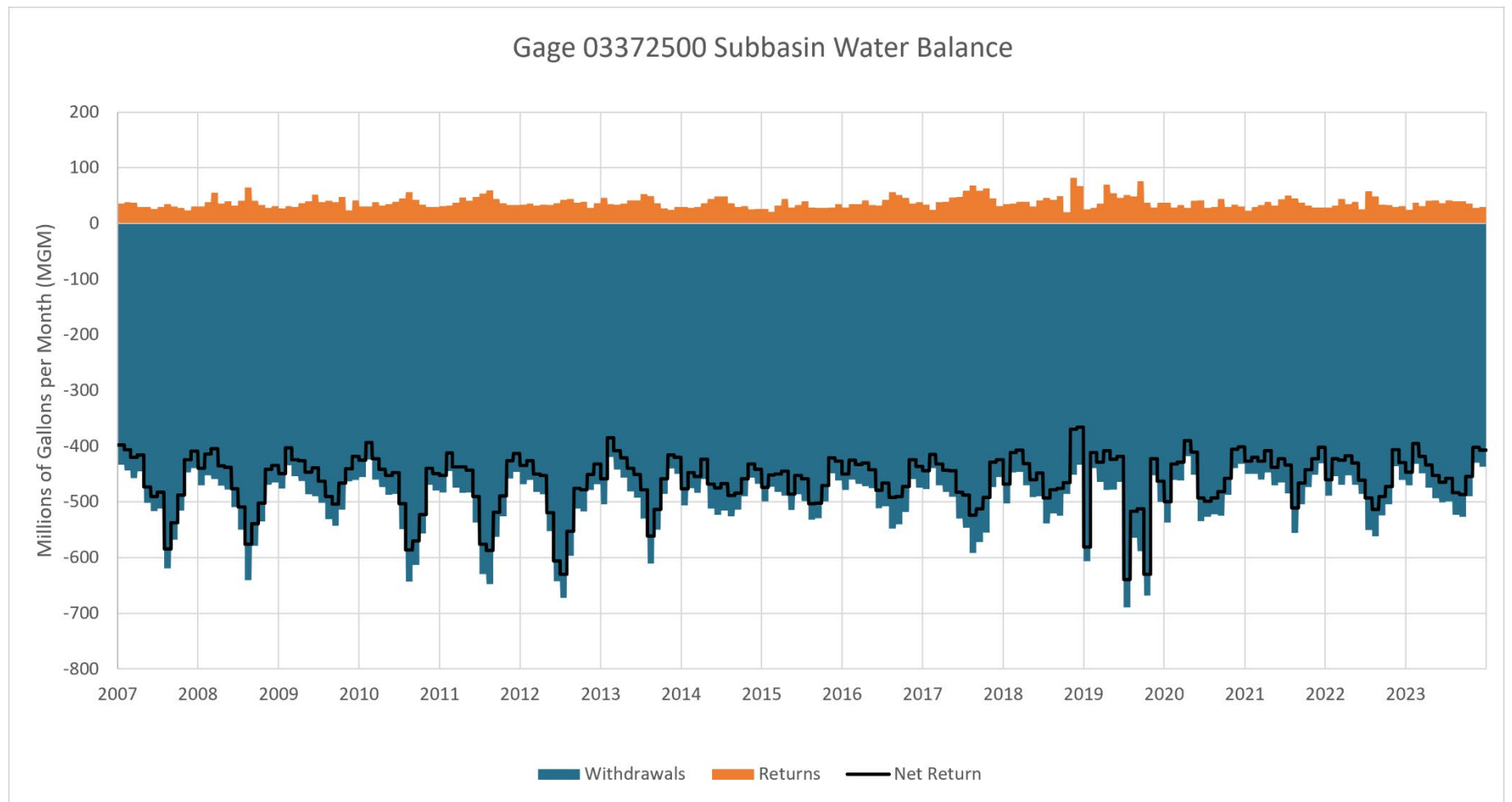


Figure C-11: Historical water withdrawals and returns from USGS gage 03372500 in the East Fork White River Basin. This subbasin has an imbalance of withdrawals due to the City of Bloomington pumping their water here but returning wastewater in two different subbasins (03360500 and 03373500).



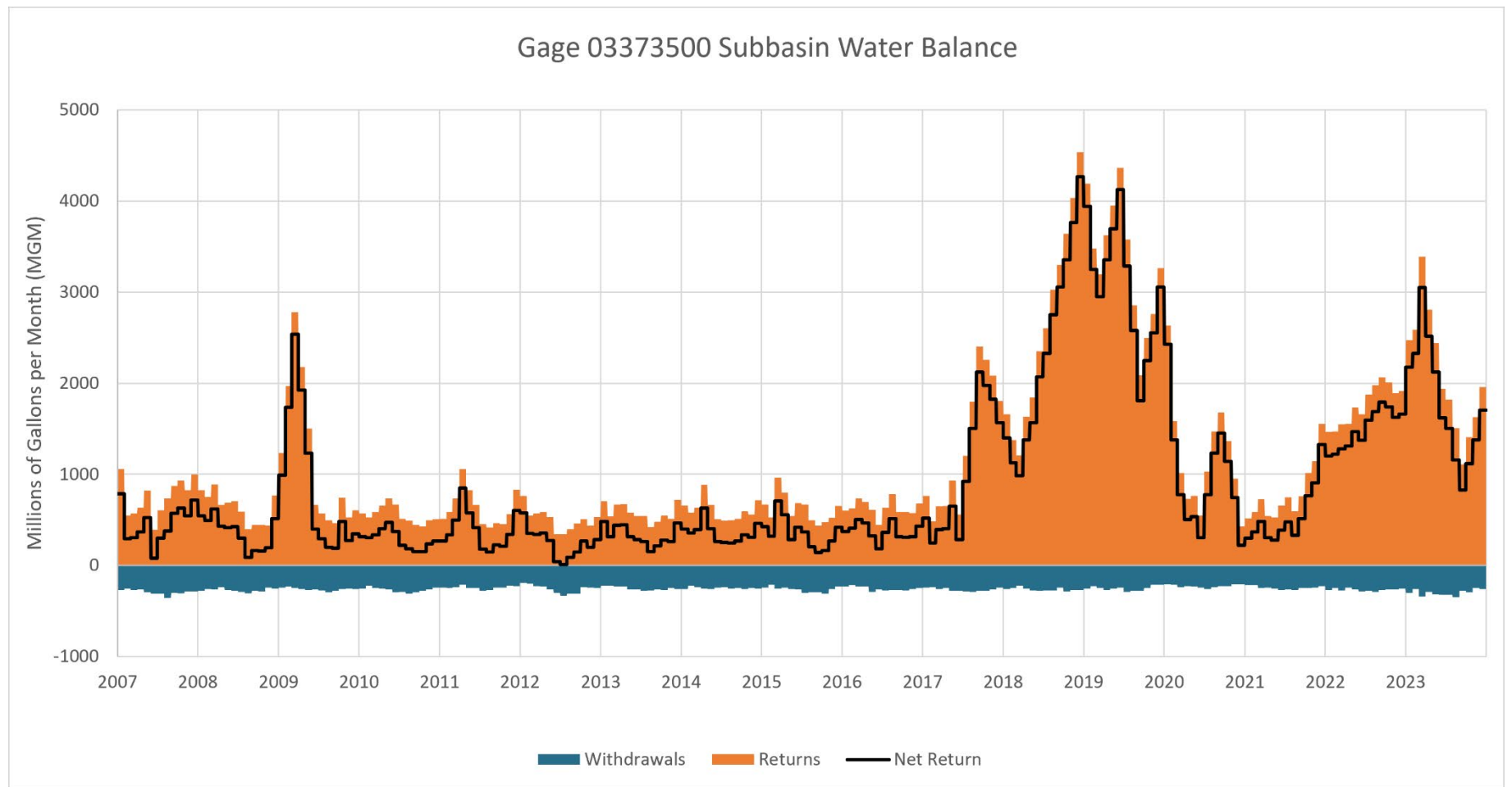


Figure C-12: Historical water withdrawals and returns from USGS gage 03373500 in the East Fork White River Basin. The return imbalance is caused by two stone quarries returning significantly more water than they withdrawal, as well as the City of Bloomington returning water here that was pumped from 03372500.



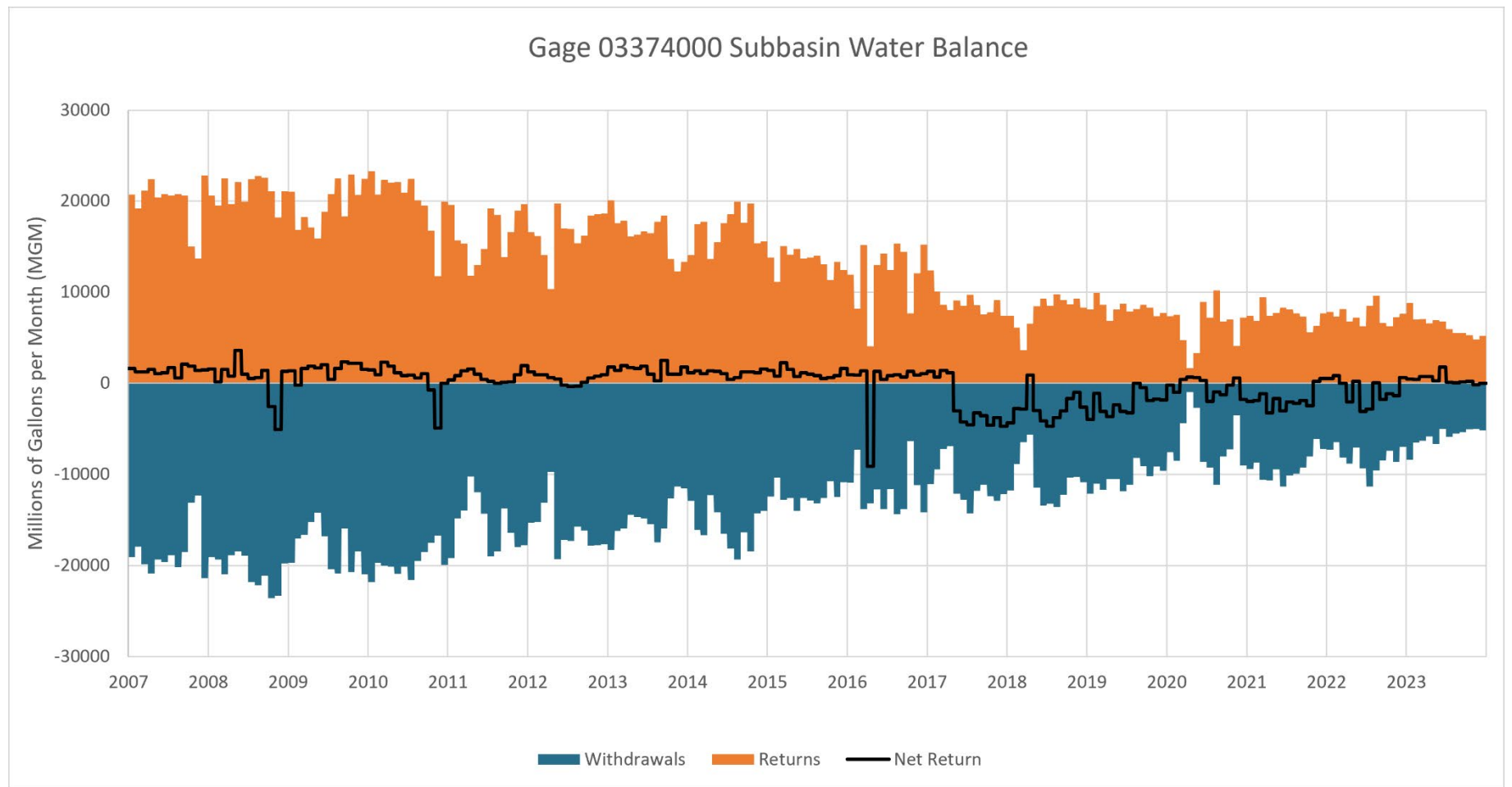


Figure C-13: Historical water withdrawals and returns from USGS gage 03374000 in the White River Basin. Three power generating stations (Petersburg, Edwardsport, and Frank E. Ratts) account for the majority of both withdrawals and return flows. Edwardsport changed from coal to combined-cycle in 2011, and Ratts was closed in 2015, leading to the gradual decline in water usage with time.



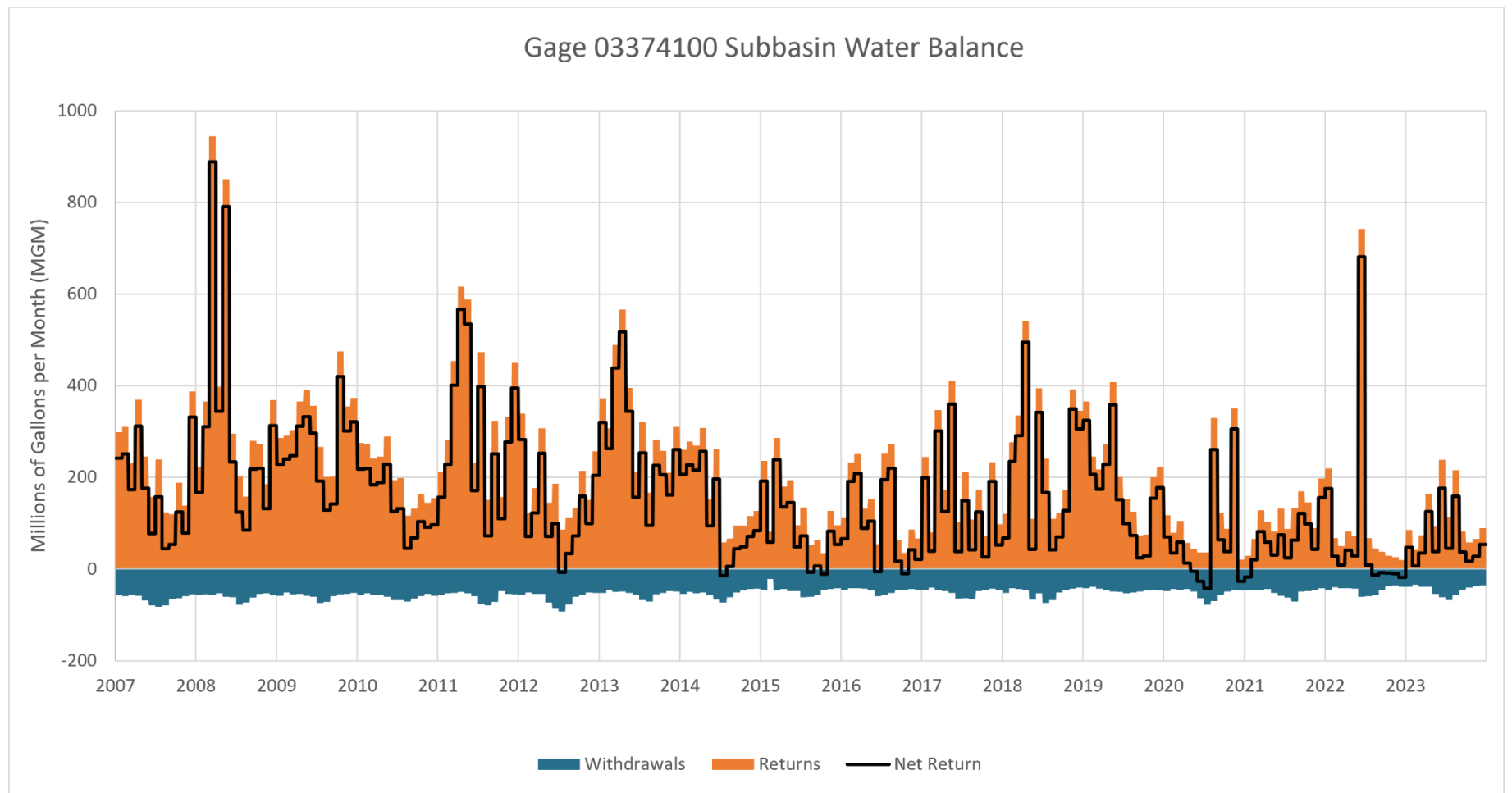


Figure C-14: Historical water withdrawals and returns from USGS gage 03374100 in the White River Basin. The imbalance is caused by two mines (Prosperity & Pride’s Creek) that have significant return flows but no withdrawals.



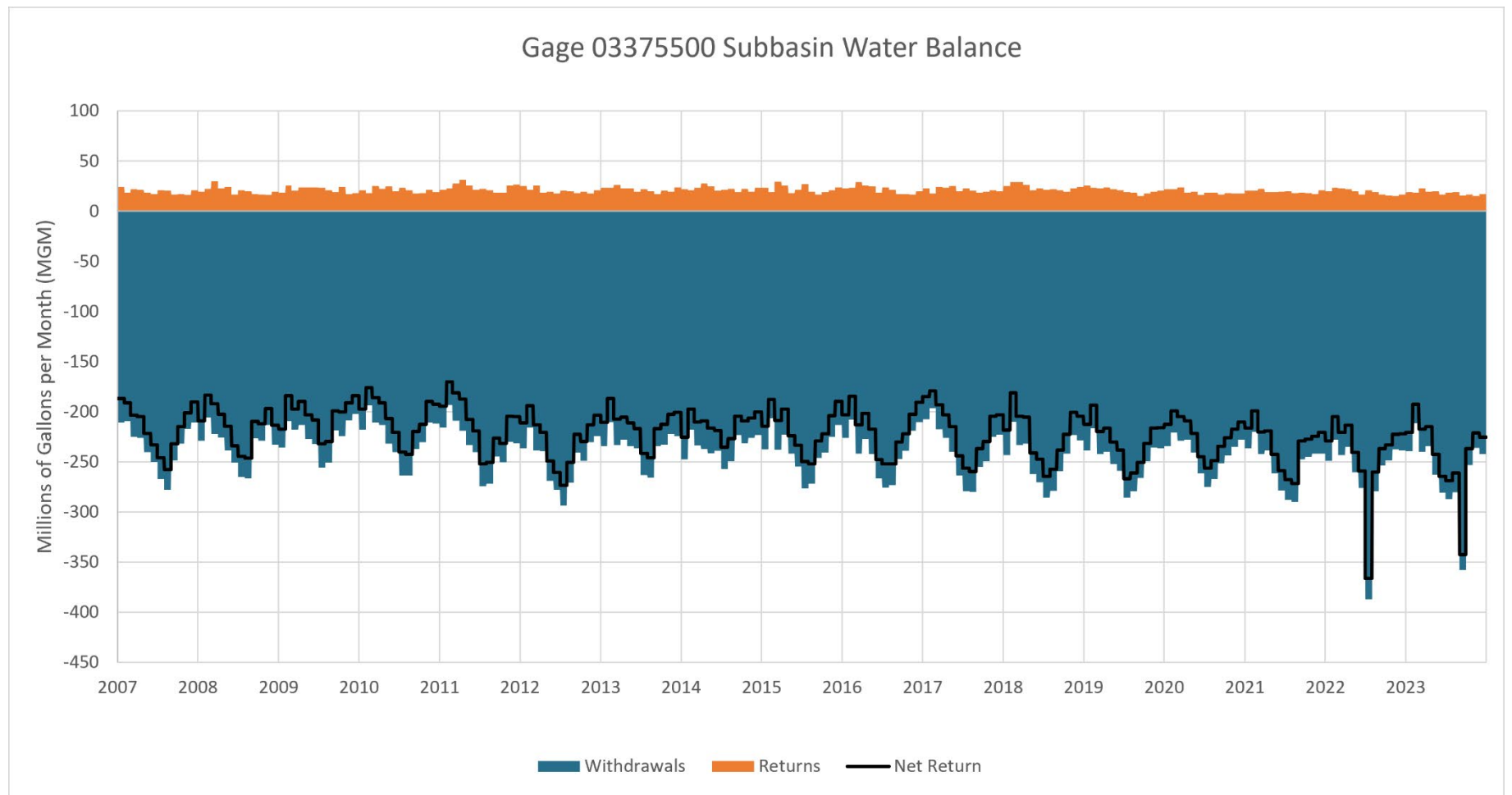


Figure C-15: Historical water withdrawals and returns from USGS gage 03375500 in the Patoka River Basin. The withdrawal imbalance is caused by Patoka Lake Regional Water & Sewer District, who pumps from Patoka Lake but distributes water across a wide service area that spans multiple subbasins without many centralized WWTPs to account for return flows.



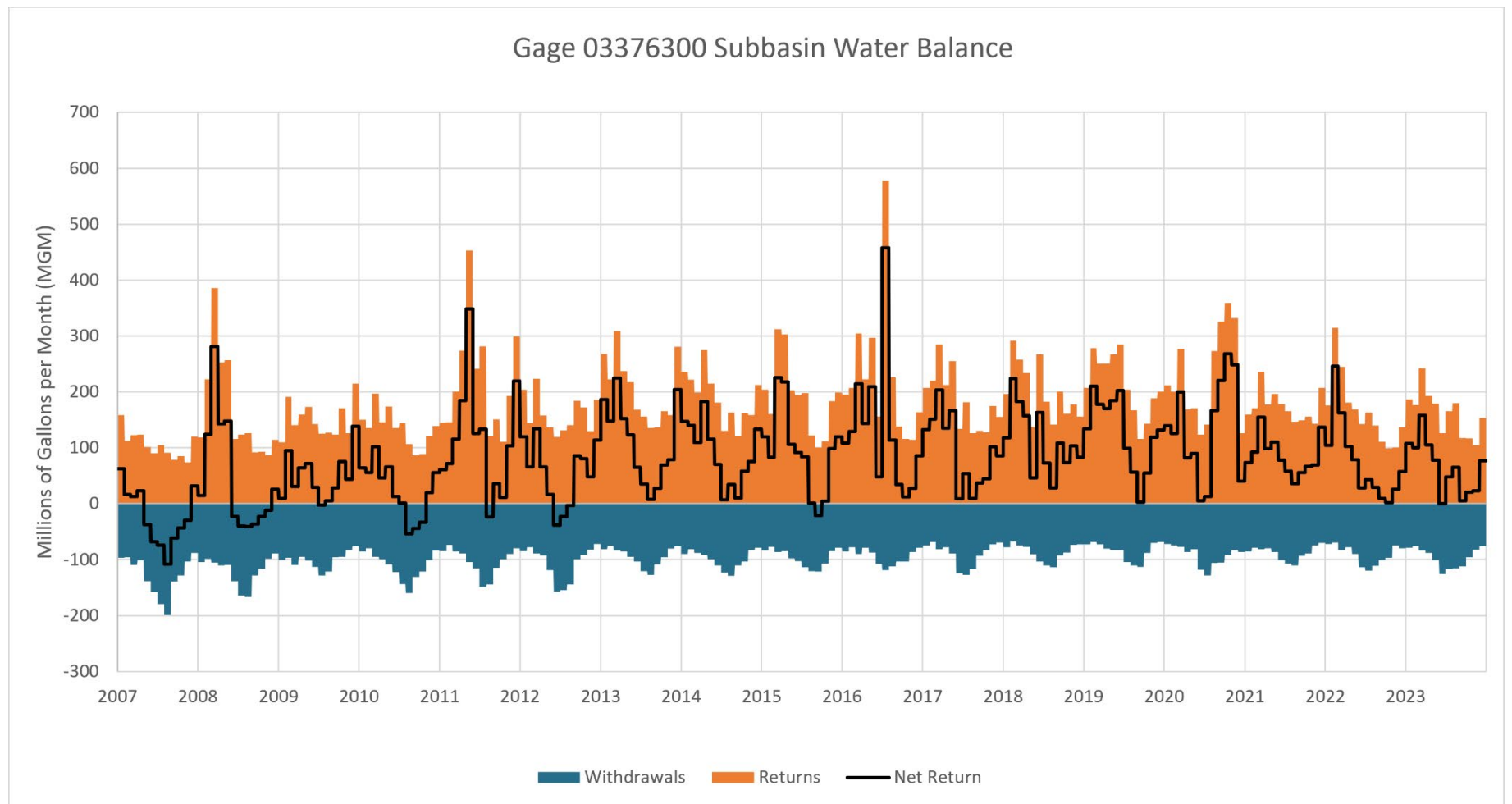


Figure C-16: Historical water withdrawals and returns from USGS gage 03376300 in the Patoka River Basin. The imbalance of returns here is due to the Solar Sources Charger Mine producing more return flows than they are withdrawing, presumably caused by alterations in groundwater flow. Seasonal spikes in pumping are due to turf irrigation withdrawals. Much of the subbasin is served water sourced from Patoka Lake in subbasin 03375500.



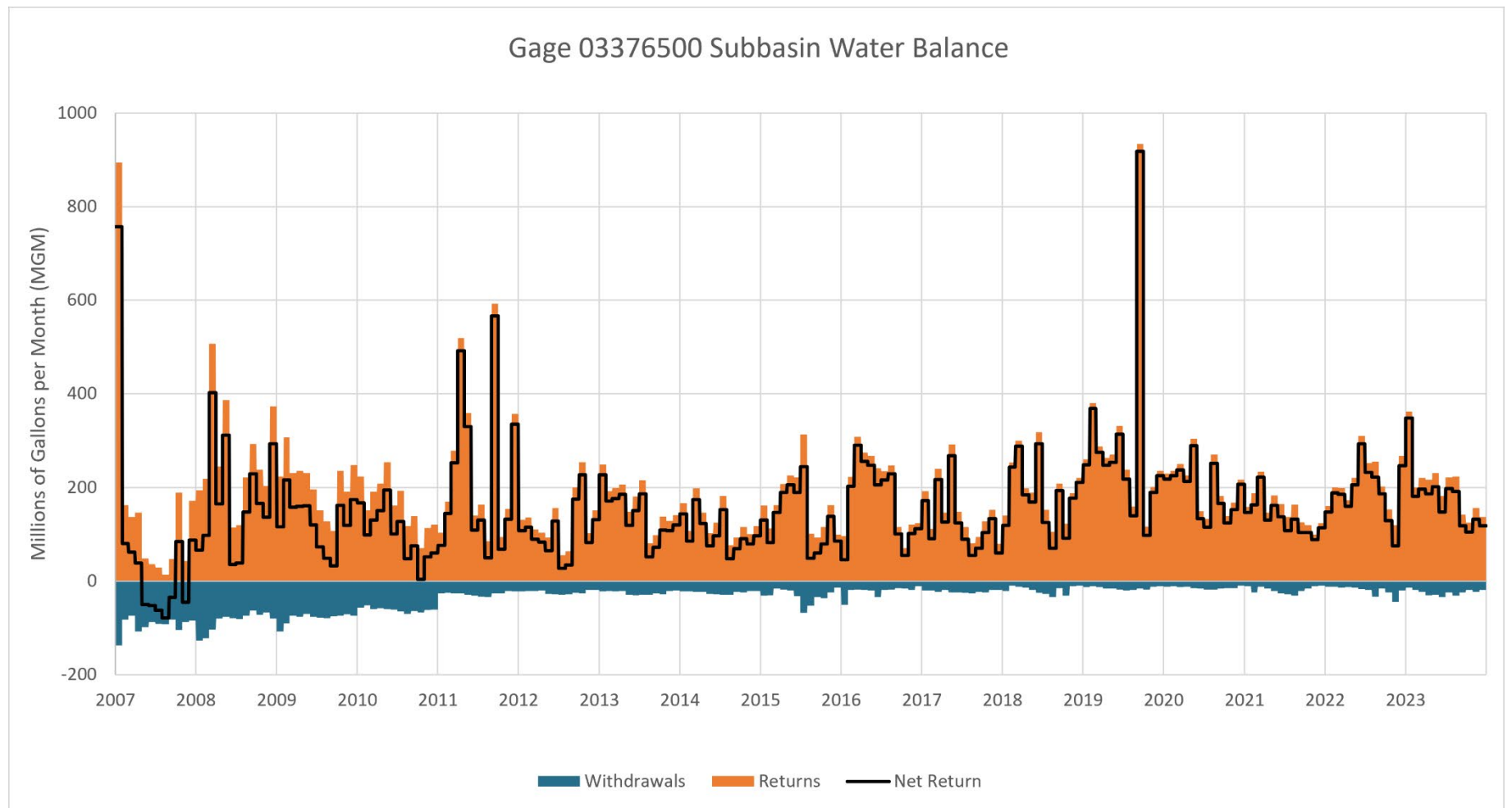


Figure C-17: Historical water withdrawals and returns from USGS gage 03376500 in the Patoka River Basin. The imbalance of return flows is caused by mine in the area. There is only one company (Peabody) that is consistently pumping water, but several abandoned or reclaimed mines sites that show notable returns.



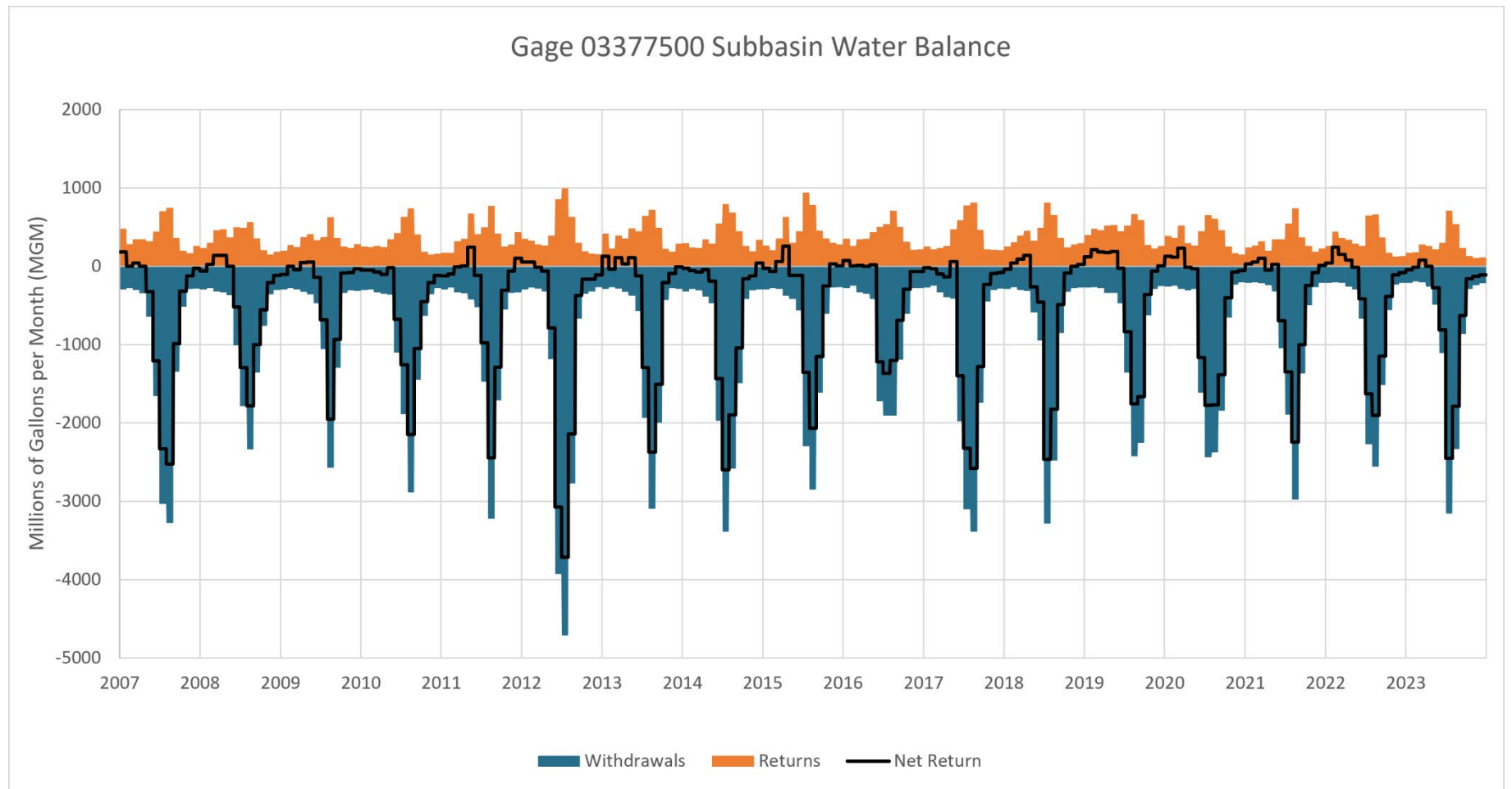


Figure C-18: Historical water withdrawals and returns from USGS gage 03377500 in the Wabash River Basin. Withdrawals dominate the growing season due to irrigation pumping. The town of Bridgeport resells water that is returned in 03346500, further contributing to the overall imbalance.



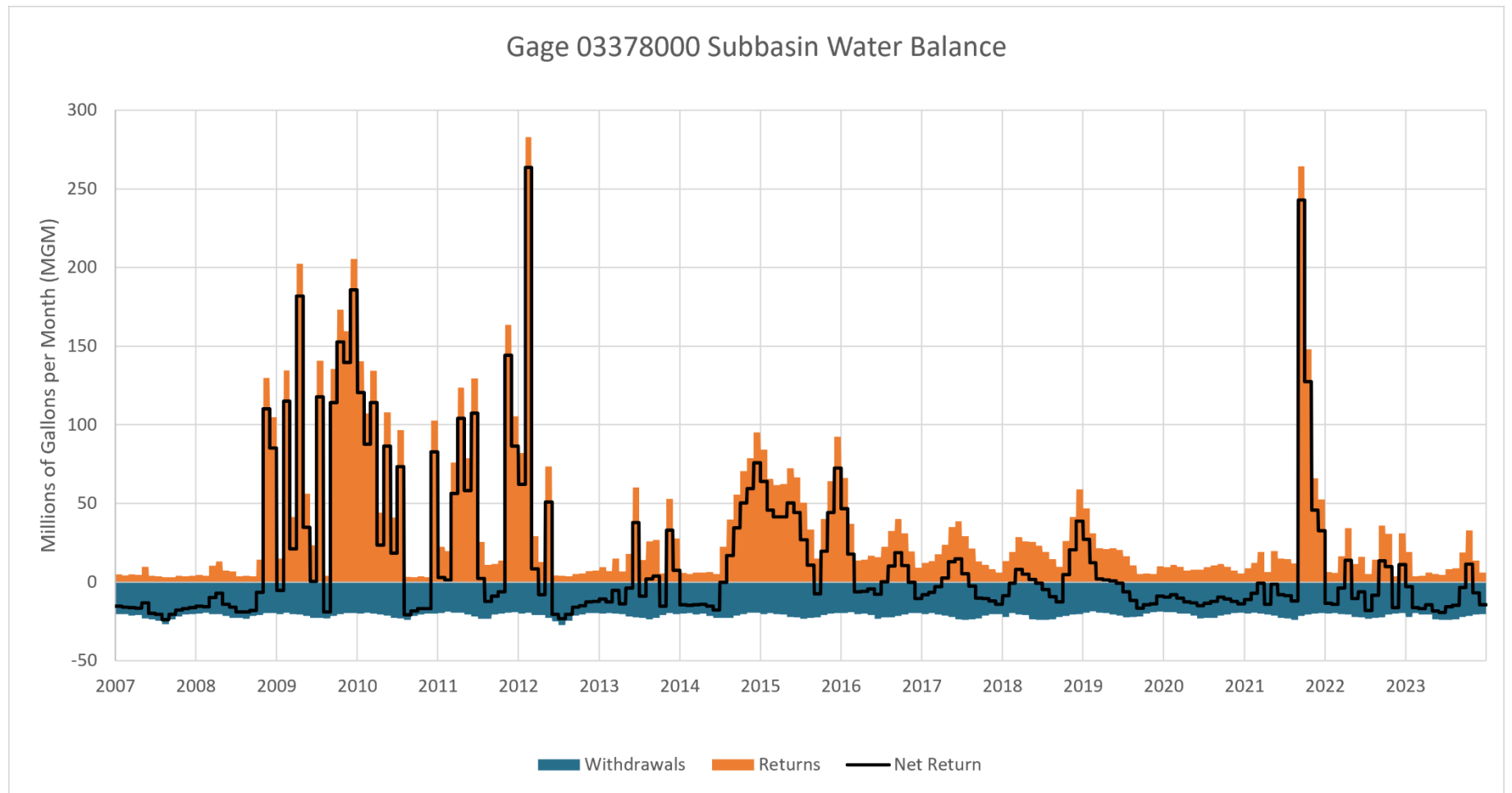


Figure C-19: Historical water withdrawals and returns from USGS gage 03378000 in the Wabash River Basin. The imbalance is caused by a mine in Illinois (Vigo Coal / Friendsville Mine) that has no pumping data but significant return flow. This mine also returns in 03378500.



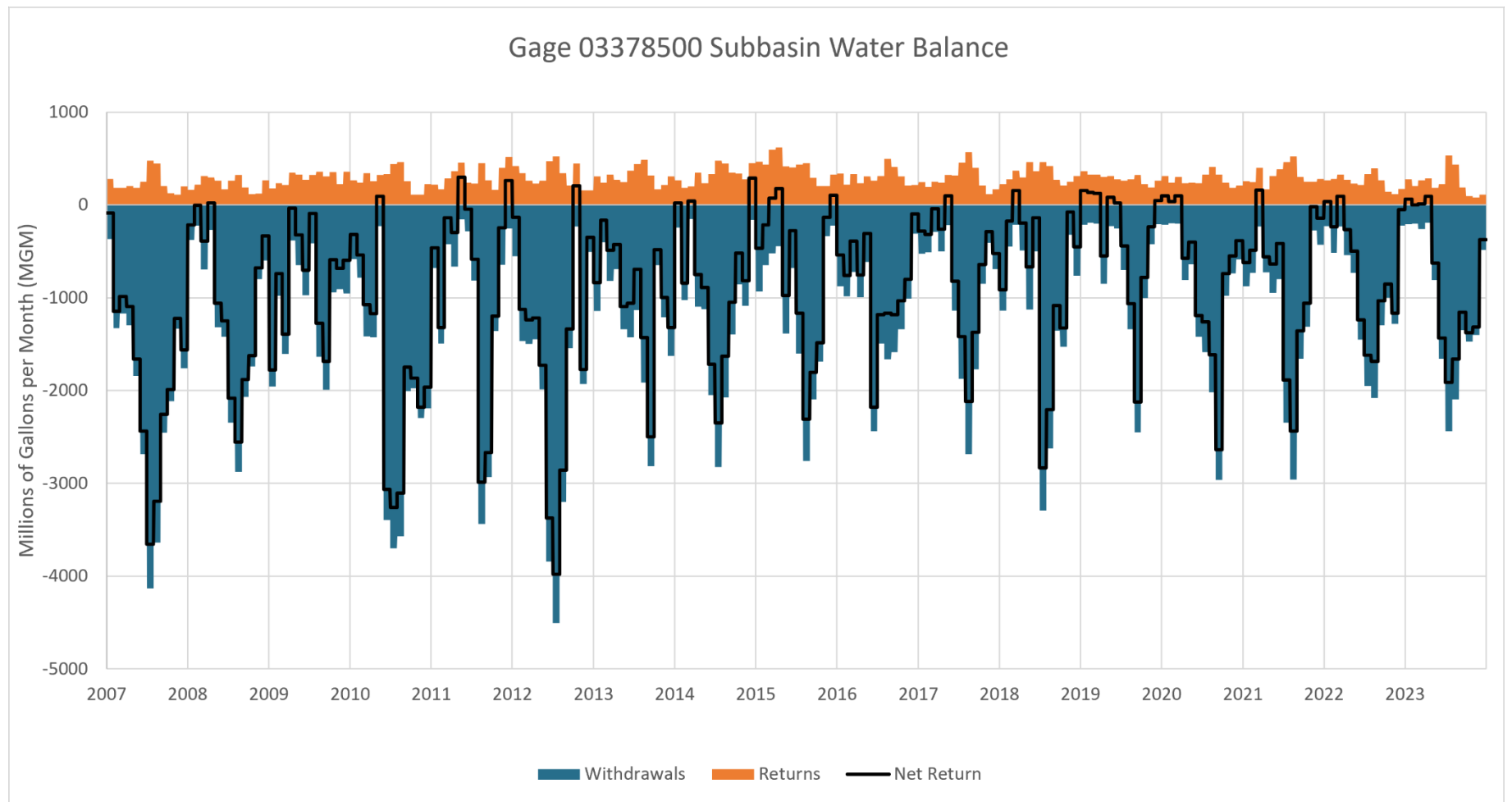


Figure C-20: Historical water withdrawals and returns from USGS gage 03378500 in the Wabash River Basin. The withdrawal imbalance is primarily due to the Gibson Generating Station pumping significant amounts of cooling water but subsequently discharging wastewater into a contained cooling pond rather than directly into a waterway. It is assumed that this return water is ultimately evaporated.



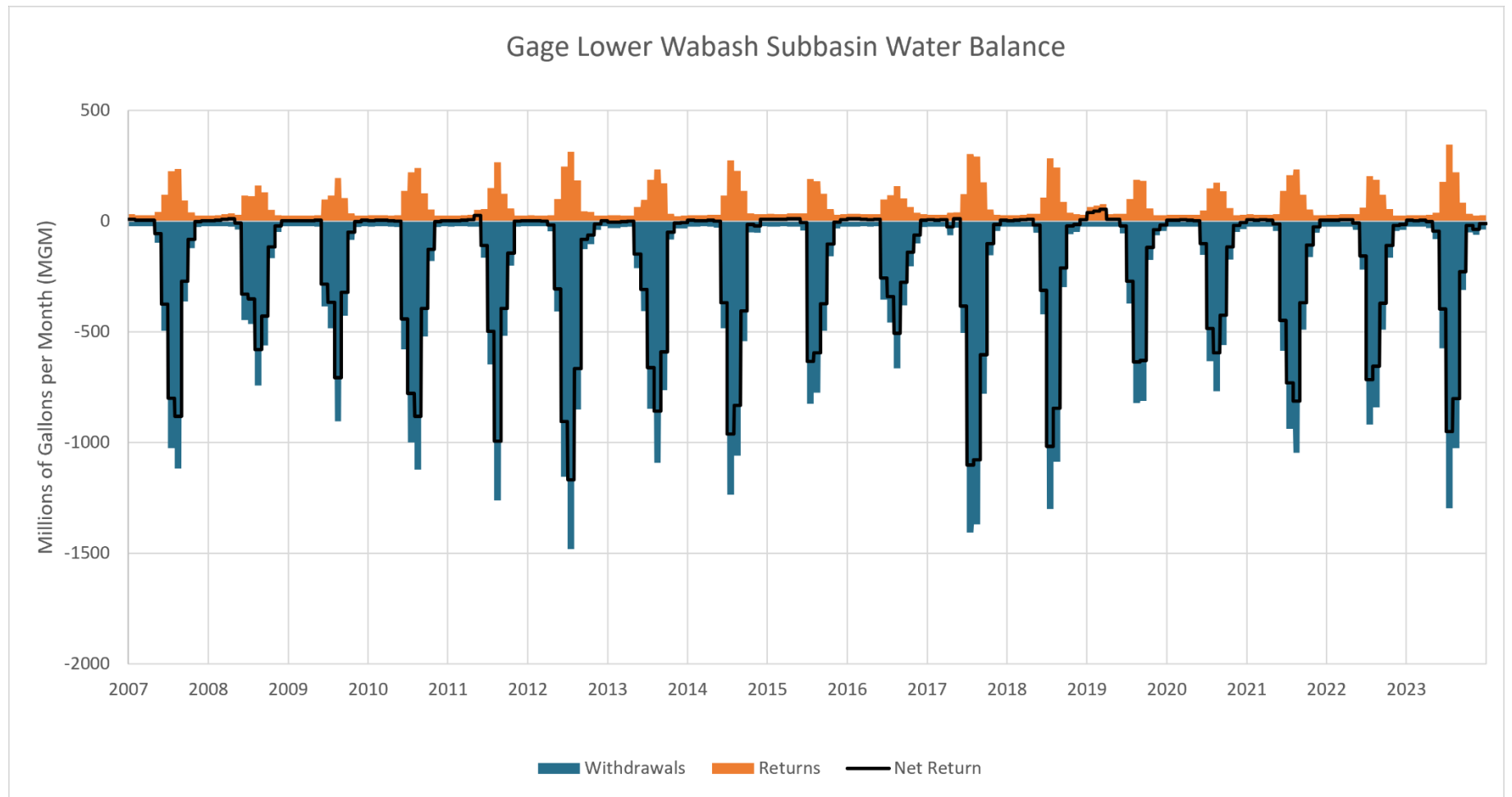


Figure C-21: Historical water withdrawals and returns from the Lower Wabash catchment in the Wabash River Basin. The seasonal withdrawal signal is due to significant agricultural irrigation during growing months.

