

ROOST SURVEYS AND MONITORING FOR LOWER COLORADO RIVER BAT SPECIES

October 2002 through May 2010



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Bureau of Reclamation &
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to Patricia Brown, Ph.D.
Brown-Berry Biological Consulting



This project is dedicated to the memory of my husband and partner Dr. Robert Berry, who shared in my research along the LCR between 1980 and 2007, and to Dr. Ken Stager who introduced me to the bats of the LCR 42 years ago, and shared his field notes and his memories of the relatively undeveloped LCR of over 70 years ago.

ROOST SURVEY GOALS

- **To monitor and census colonial bat roosts, with emphasis on LCR MSCP covered and indicator species**
- **To identify potential species-specific threats to bat roost sites**
- **To assist in the protection of critical roosts**



Townsend's Big-eared Bat



Alice Mine, Riverside Mountains



Historically large colonies in abandoned mines along the Colorado River

Foraged in cottonwood riparian

Marked declines attributable to loss of cottonwood riparian and roost disturbance





Cave Myotis
Myotis velifer



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Yuma Myotis

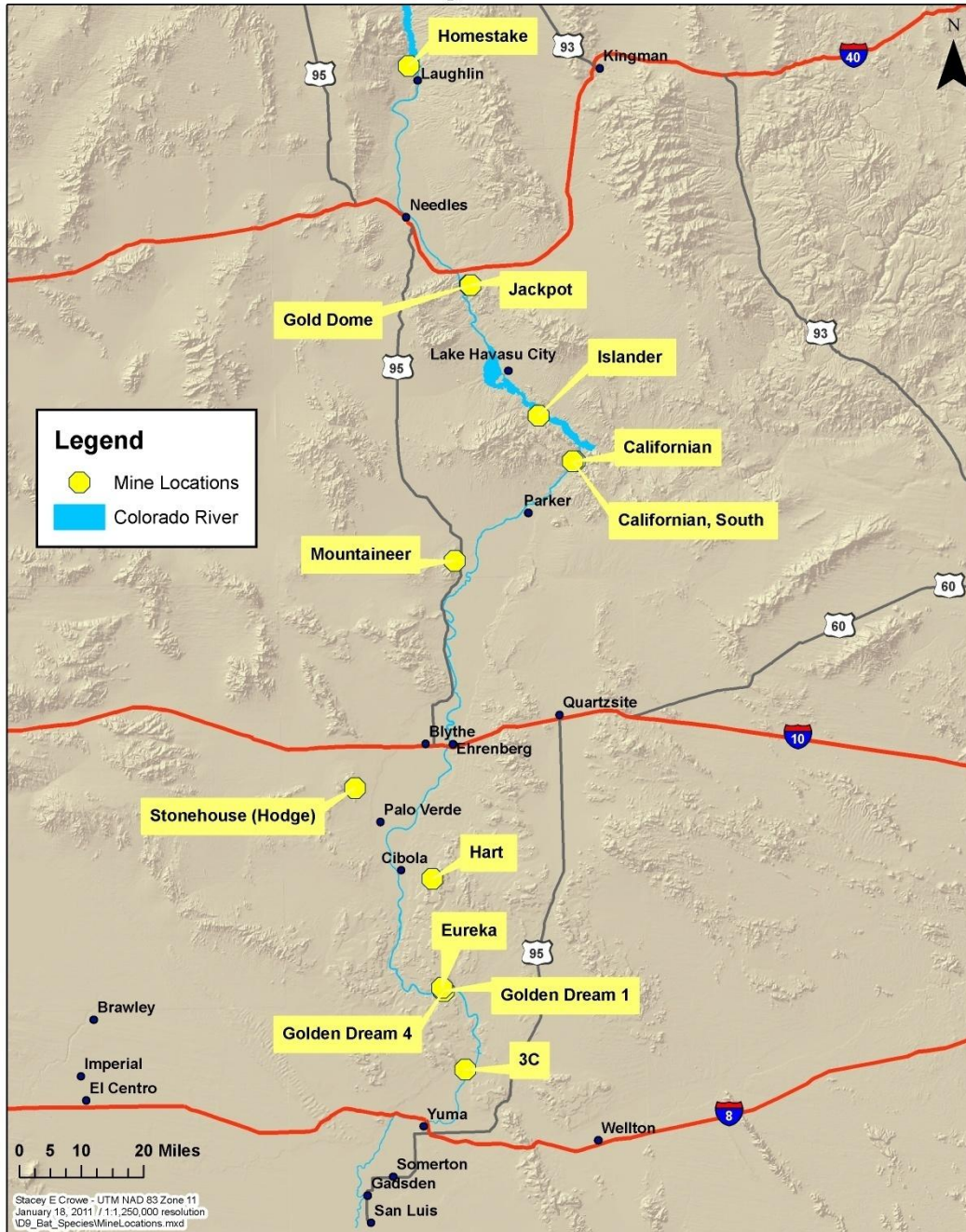


Arizona Myotis

***Myotis occultus* were “shot over water in a back eddy of the river. Here the bats arrived in considerable numbers at early dusk to drink, flitting down to the water’s surface and dipping several times before flying off among the willows and cottonwoods” (Grinnell, 1914).**



Mine Locations Along the Lower Colorado River



Mine Selection Criteria

- Historic roosts
- LCR MSCP Species
- Maternity colonies
- Large colonies
- Accessible
- Protected by gates or location
- Different areas along the LCR

| Mine Site | Winter | Spring | Surveyed | # openings | Ownership |
|--------------------|----------------|---|----------|--------------------------|-----------|
| 3C | Maca | Maca male, Myyu maternity | W,S | 1 | BLM |
| Californian | Maca | Maca male, Myve maternity | W,S | 1 | BLM |
| Californian, South | Maca | Maca maternity, Myve and Myyu | W,S | 2 | BLM |
| Eureka | Maca | Maca and Myyu maternity | S | 7 | USFWS |
| Gold Dome | Maca | male Maca, Myyu, Myve | S | 1 | USFWS |
| Golden Dream 1 | | Myyu maternity | S | 1 | USFWS |
| Golden Dream 4 | Maca | Maca maternity | S | 1 | USFWS |
| Hart | Maca | Maca male | W,S | 1 | BLM |
| Homestake | Maca | Maca maternity, Myyu & Myve male | W,S | 3 | NPS |
| Islander | Maca. Tabr lek | Maca and Myyu maternity | S | 4 | BLM |
| Jackpot 1 | Maca | Maca male, Myve maternity | W,S | 1 | USFWS |
| Mountaineer | Maca | Maca, Coto, Anpa, Myve & Epfu maternity | W,S | 2 in winter, 4 in summer | BLM |
| Stonehouse (Hodge) | Maca | Maca and Myve maternity | W,S | 5 | BLM |



Jackpot Mine



Moon Phase Effect

January 2003

Mine

Macrotus Exit Count

Moon

o

3 C



1515

491

Queen

26

144

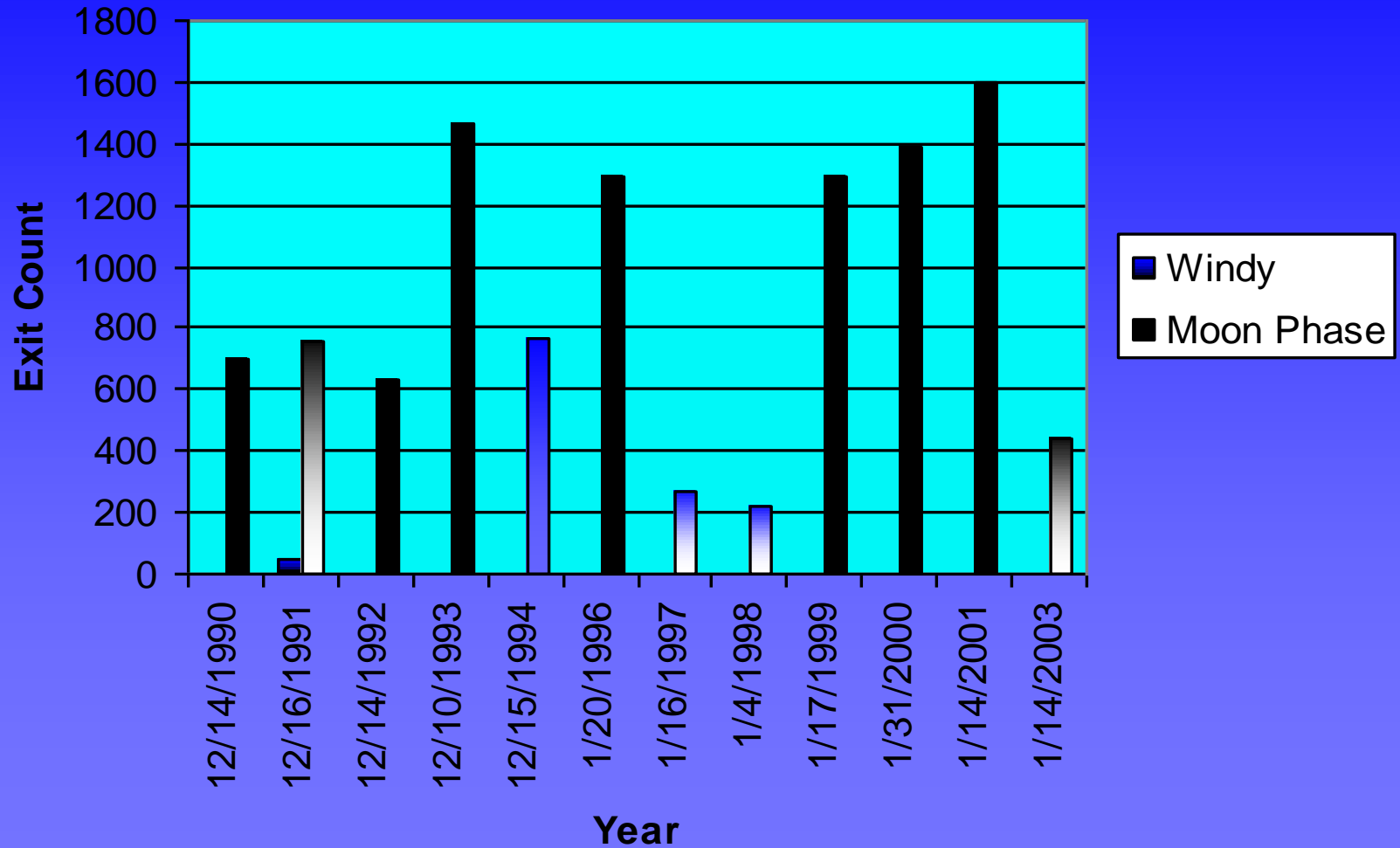
American Boy

12

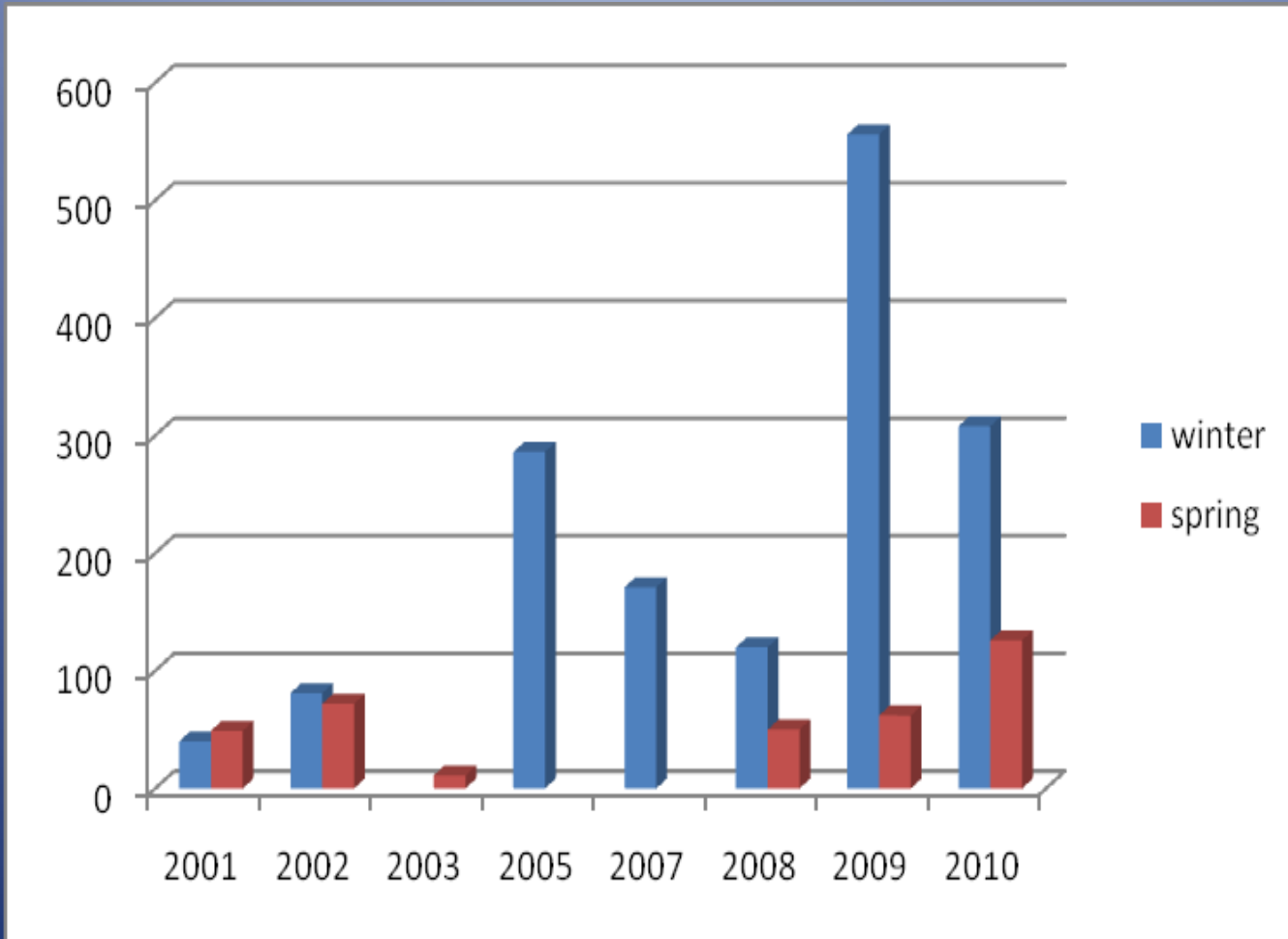
172



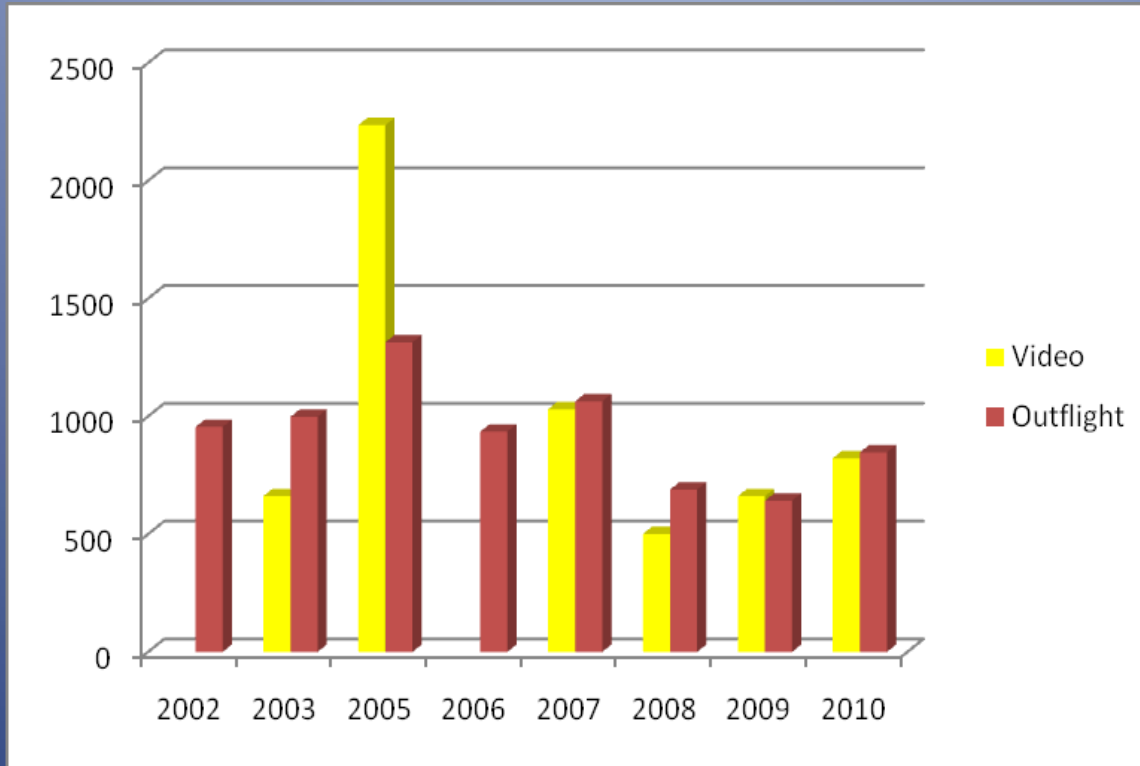
Cargo Mine Winter Exit Counts



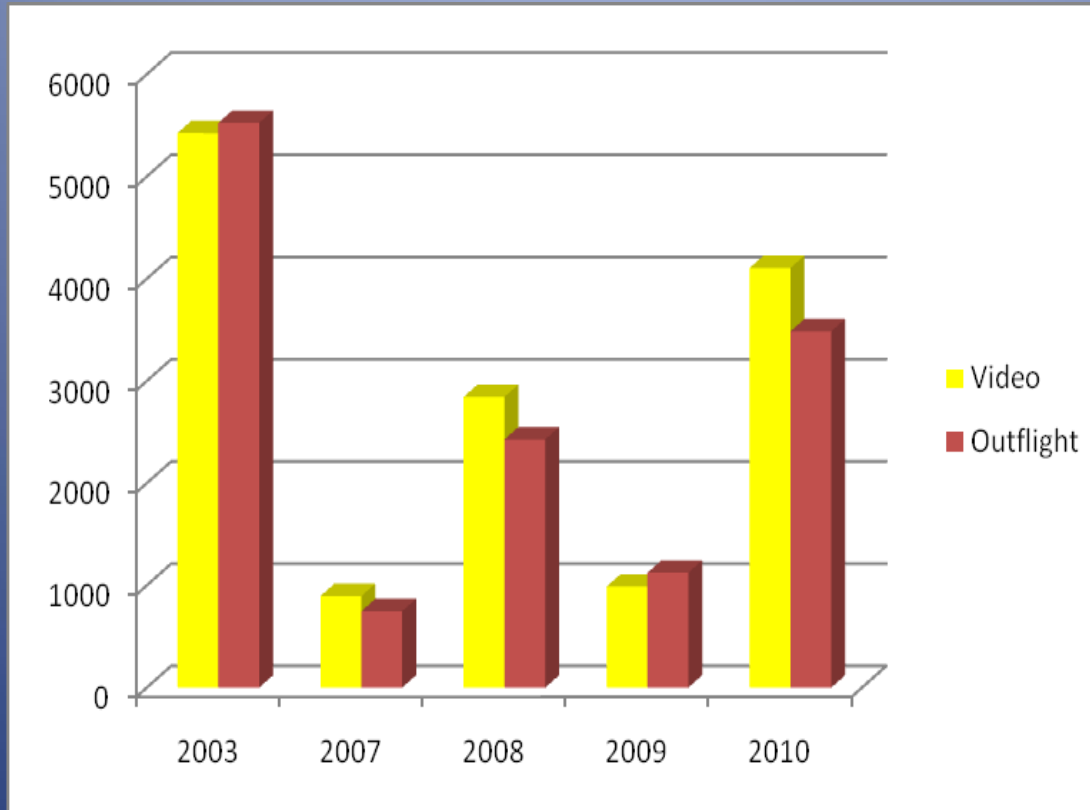
Homestake Mine winter and spring exit counts



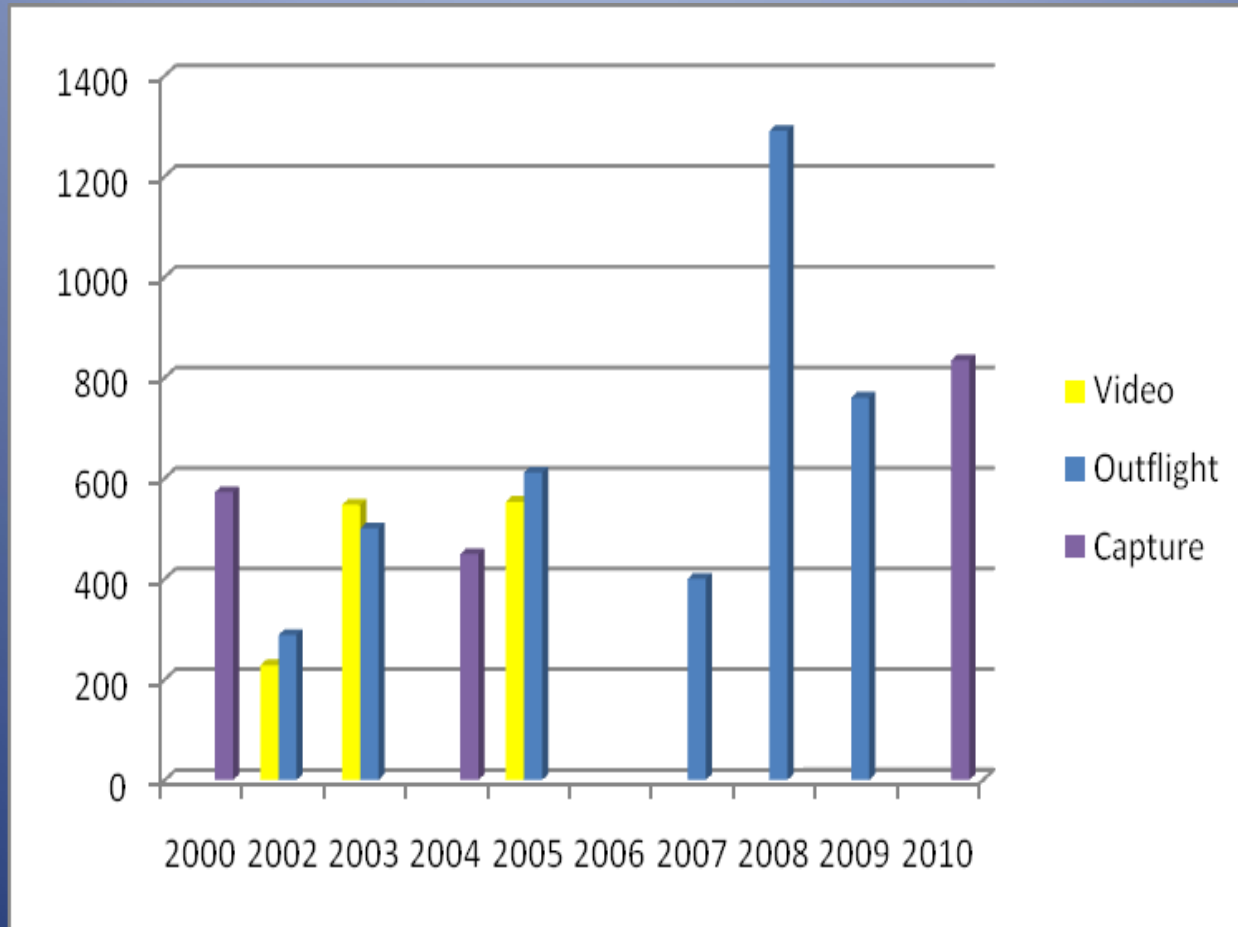
Jackpot Mine spring exit count



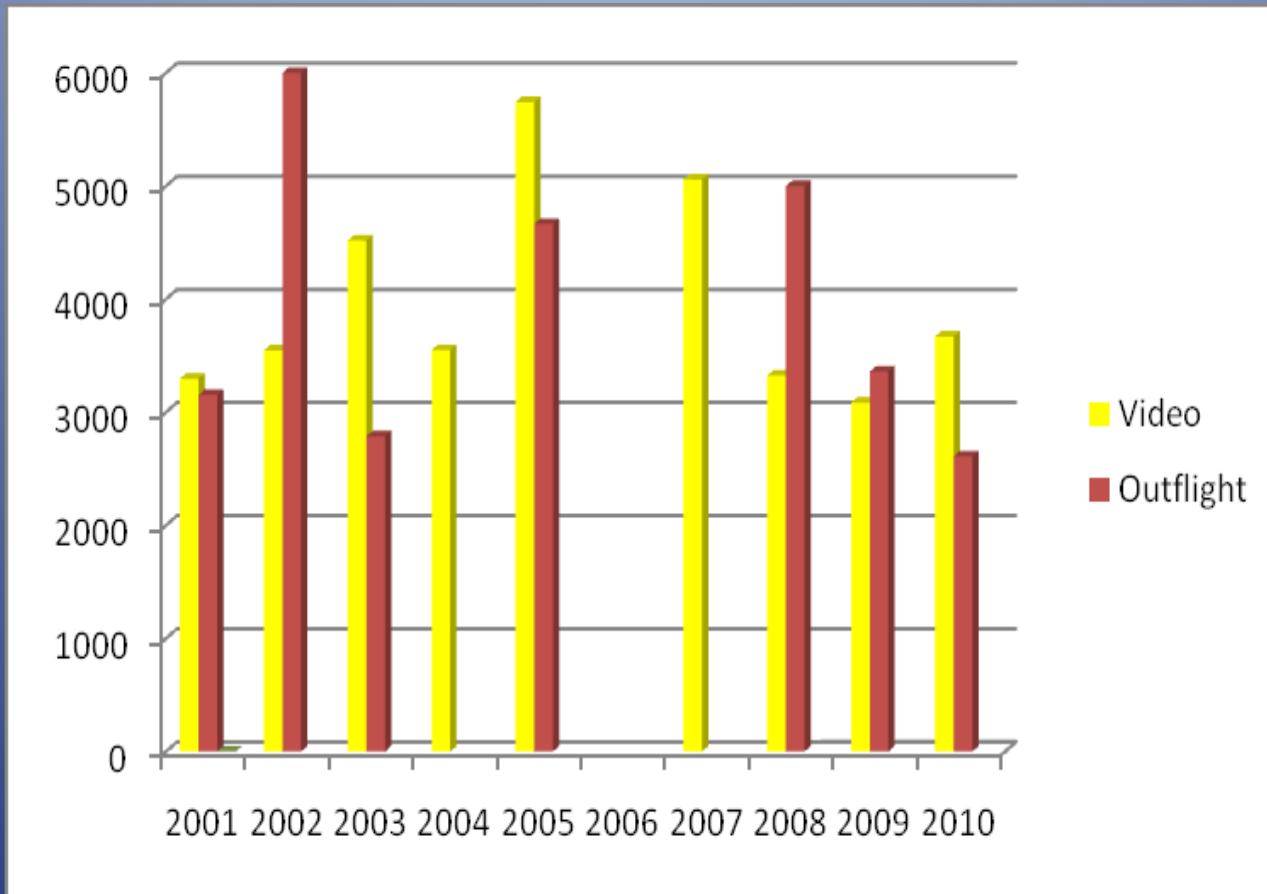
Islander Mine spring exit counts



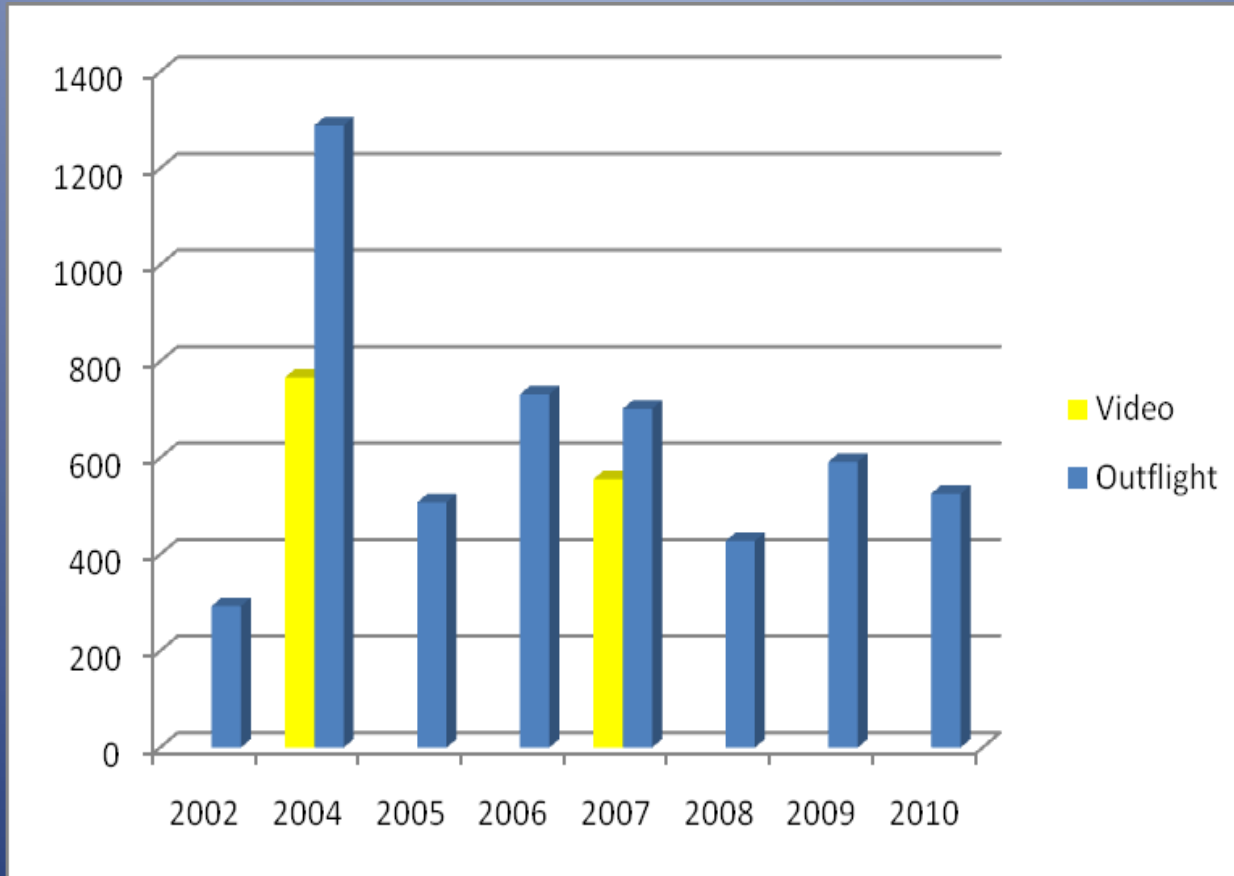
Californian Mine winter exit counts



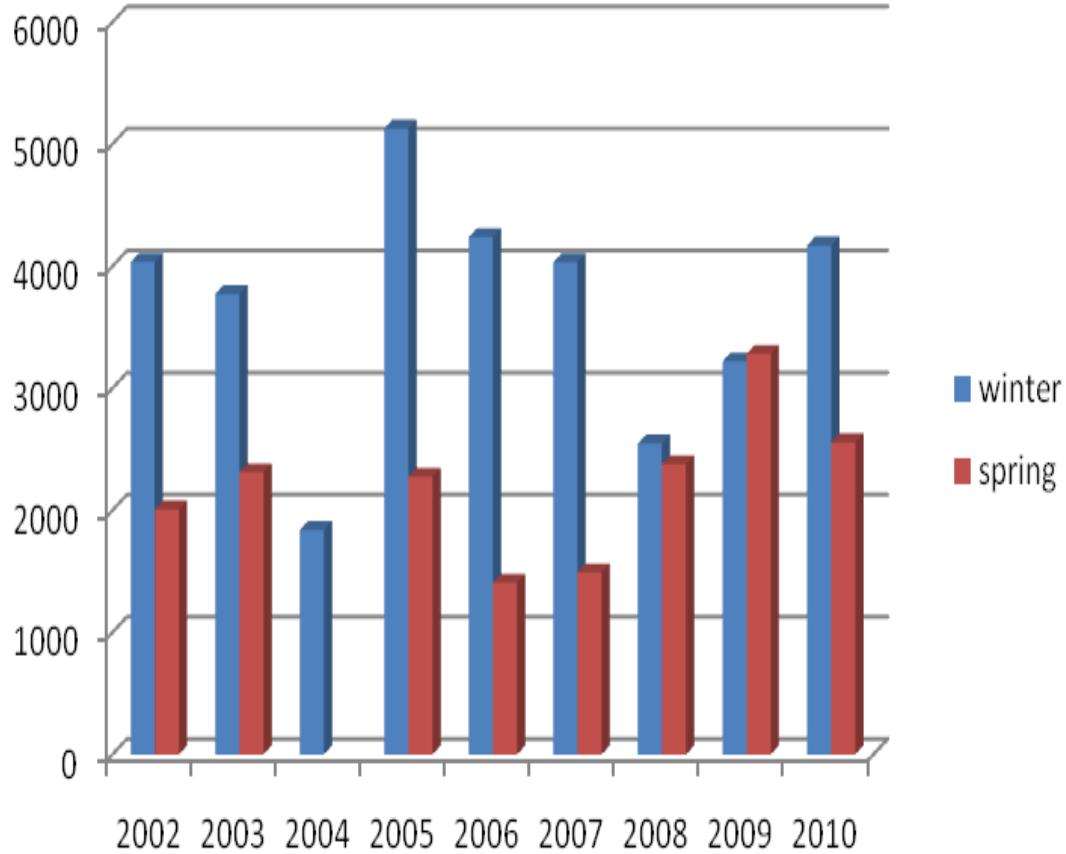
Californian Mine spring exit counts



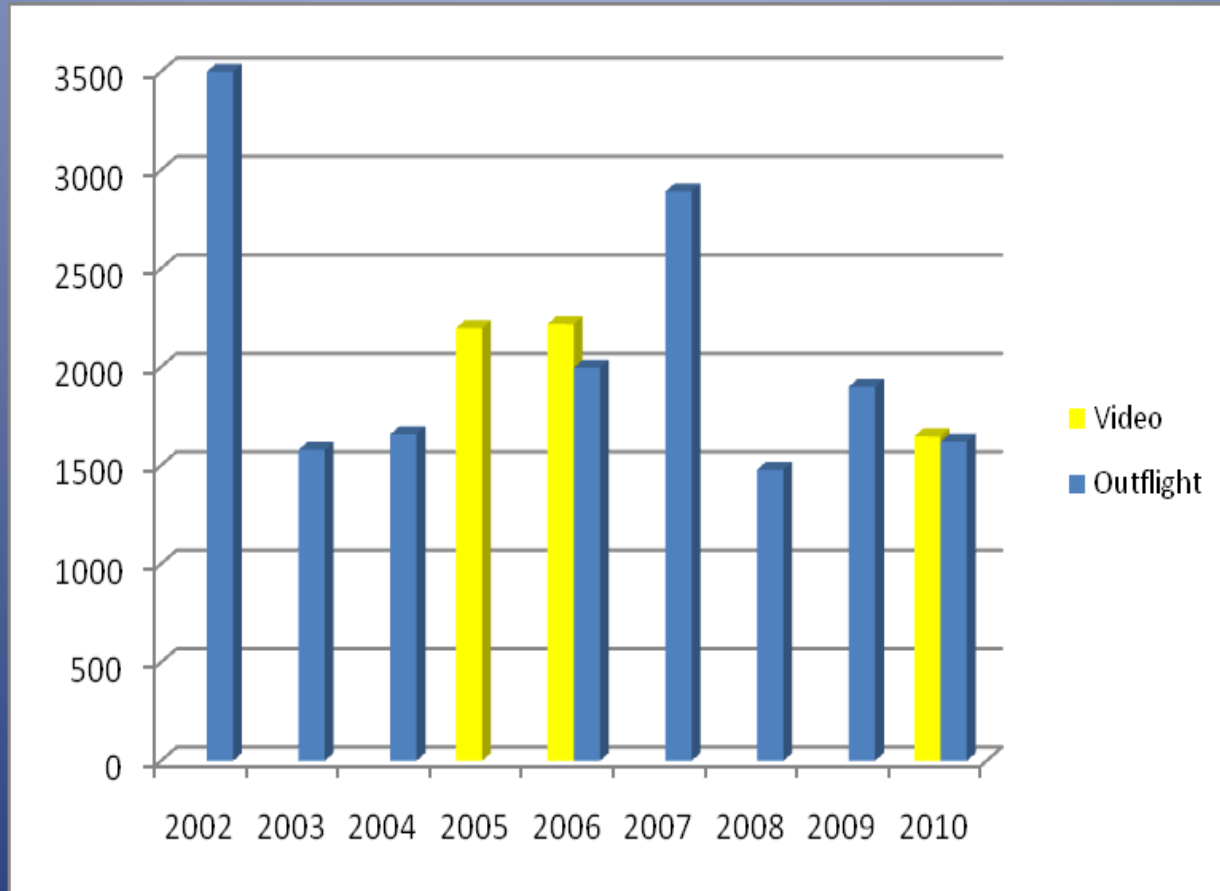
Mountaineer Mine winter exit count



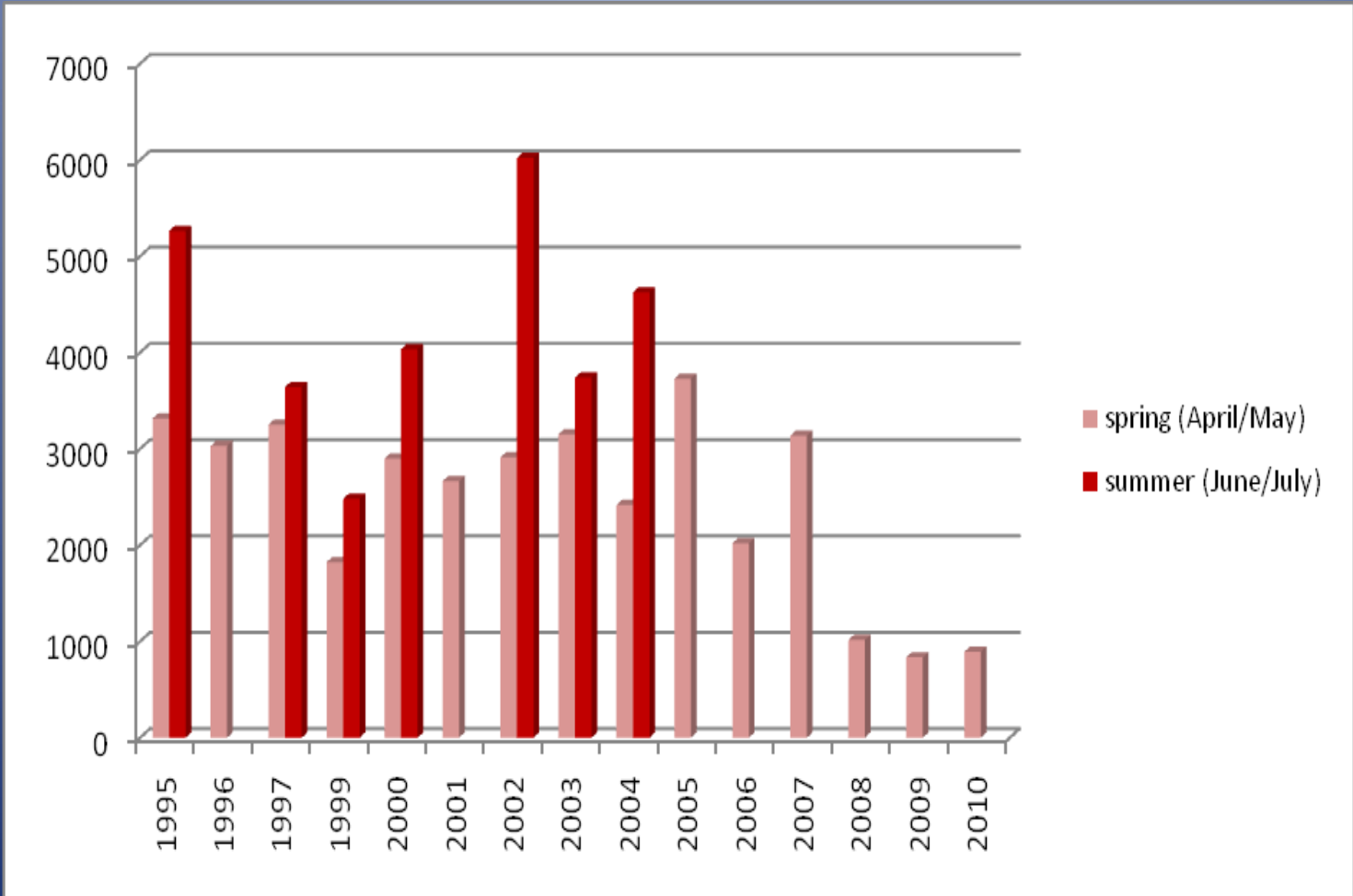
Stonehouse Mine complex winter and spring exit counts



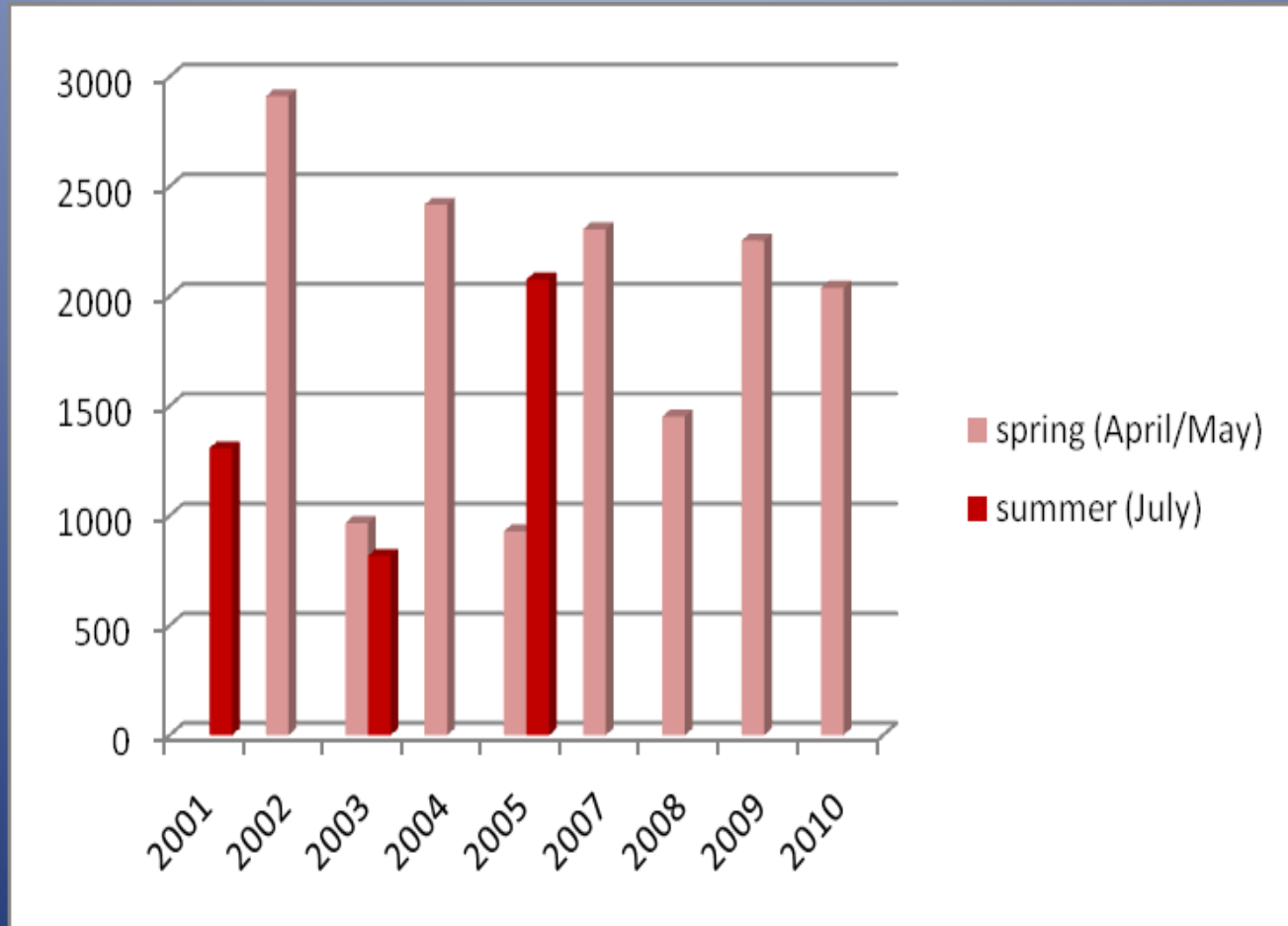
Hart Mine winter exit counts



Eureka Mine spring and summer exit counts



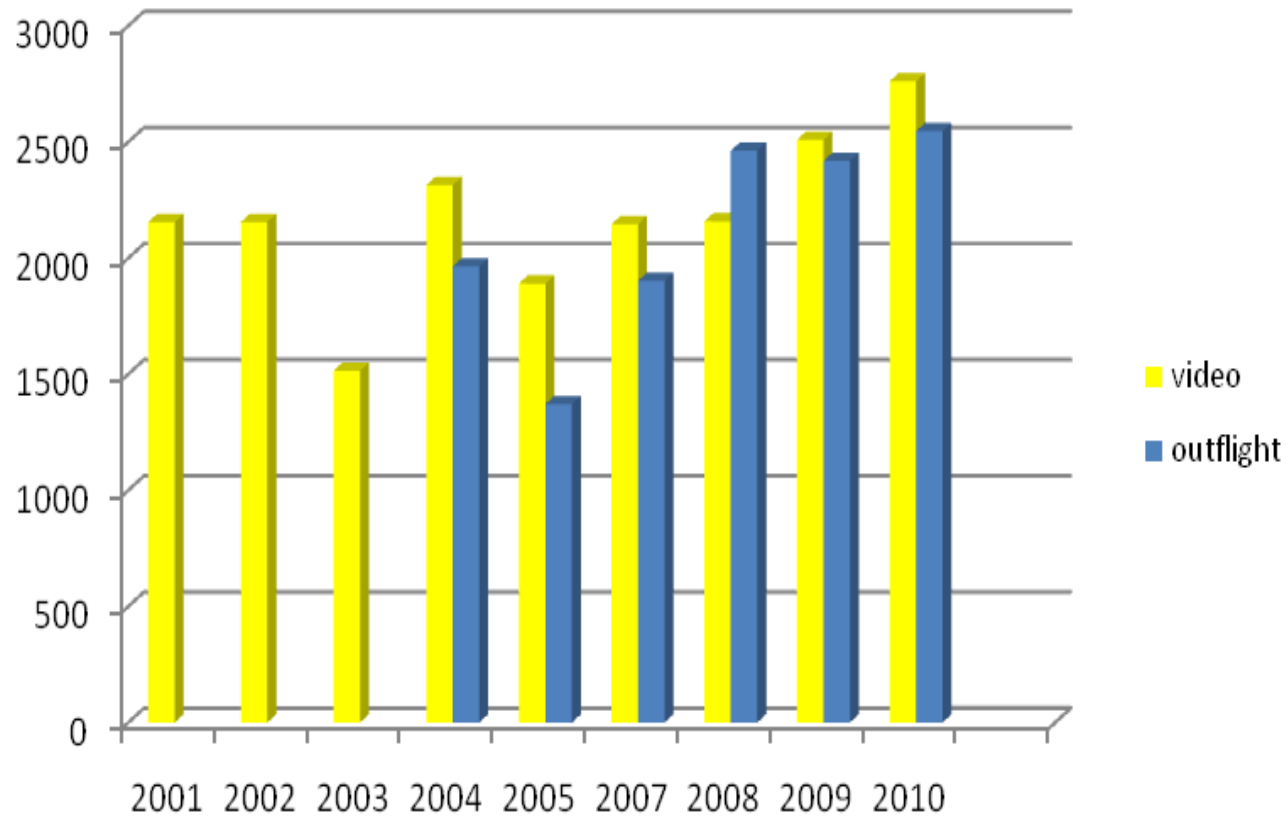
Golden Dream shaft spring and summer exit counts



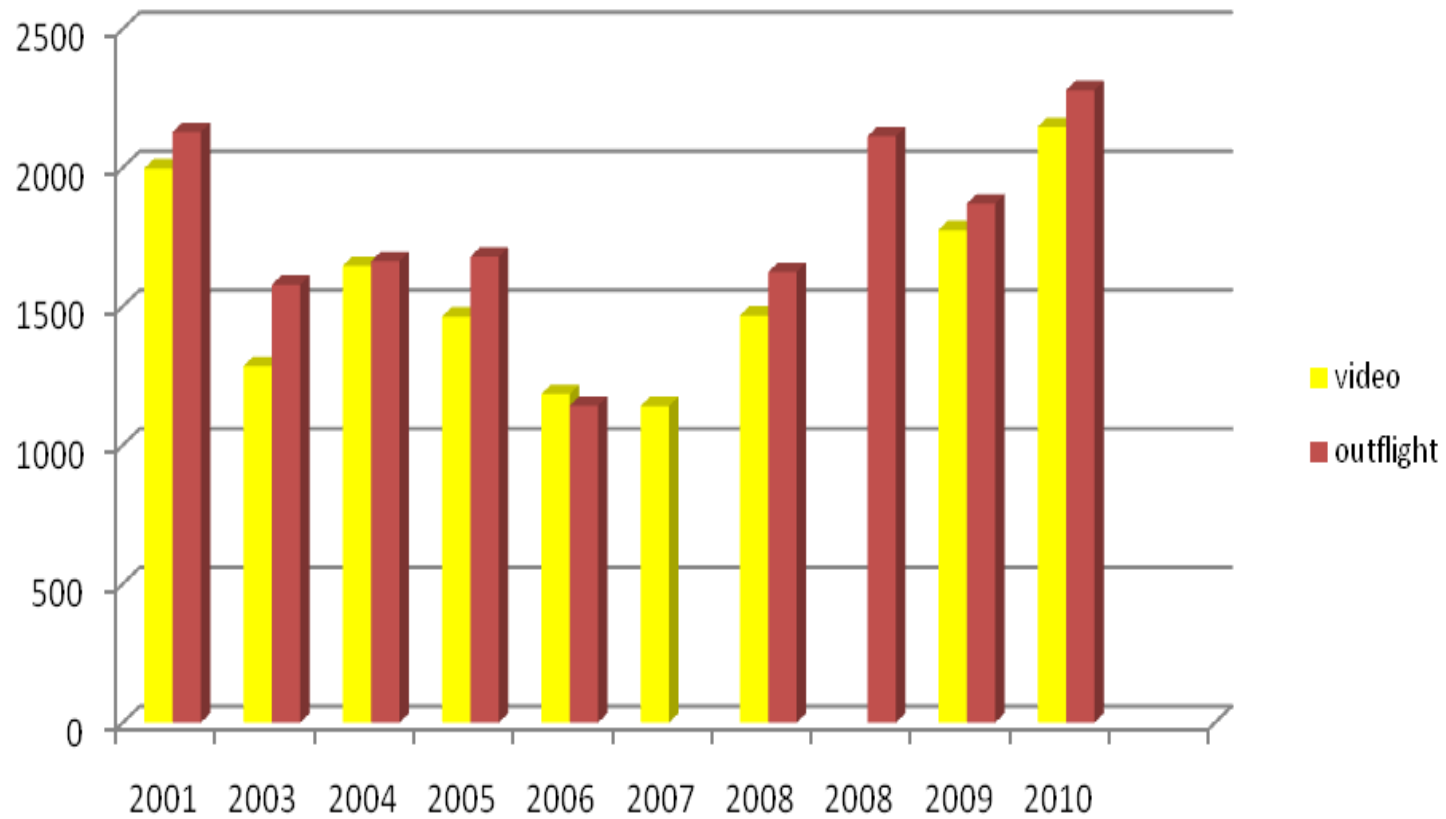


Protected Macrotus 3C Mine, Lower Colorado river

3C Mine winter exit counts



3C Mine spring exit counts



ACKNOWLEDGMENTS

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