

Applewhite Reservoir-Baseline

for

Ronald C. Griffin and Manzoor E. Chowdhury. "Evaluating a Locally Financed Reservoir: The Case of Applewhite." *Journal of Water Resources Planning and Management* 119 (November 1993): 628-44.

```
In[1]:= thinn = AbsoluteThickness[.5];  
medum = AbsoluteThickness[1.];  
thick = AbsoluteThickness[1.5];  
black = GrayLevel[0];  
BGray = GrayLevel[0.3];  
WGray = GrayLevel[0.6];  
LGray = GrayLevel[0.8];  
SetOptions[Plot, PlotStyle -> {{thinn, Black}, {thinn, Black}, {thinn, Black}},  
PlotPoints -> 40, ImageSize -> 360,  
FrameStyle -> medum, AxesStyle -> medum,  
BaseStyle -> {FontFamily -> "Helvetica", FontSlant -> Plain, FontSize -> 12}];  
SetOptions[ListPlot, AxesStyle -> medum,  
PlotStyle -> {{thinn, Black}, {thinn, Black}, {thinn, Black}}, ImageSize -> 384,  
BaseStyle -> {FontFamily -> "Helvetica", FontSlant -> "Plain", FontSize -> 12}];  
SetOptions[ParametricPlot, PlotStyle ->  
{{thinn, Black}, {thinn, Black}, {thinn, Black}}, PlotPoints -> 40,  
FrameStyle -> medum, AxesStyle -> medum, PlotStyle -> medum,  
BaseStyle -> {FontFamily -> "Helvetica", FontSlant -> "Plain", FontSize -> 12}];  
SetOptions[Graphics, BaseStyle ->  
{FontFamily -> "Helvetica", FontSlant -> "Plain", FontSize -> 12}];
```

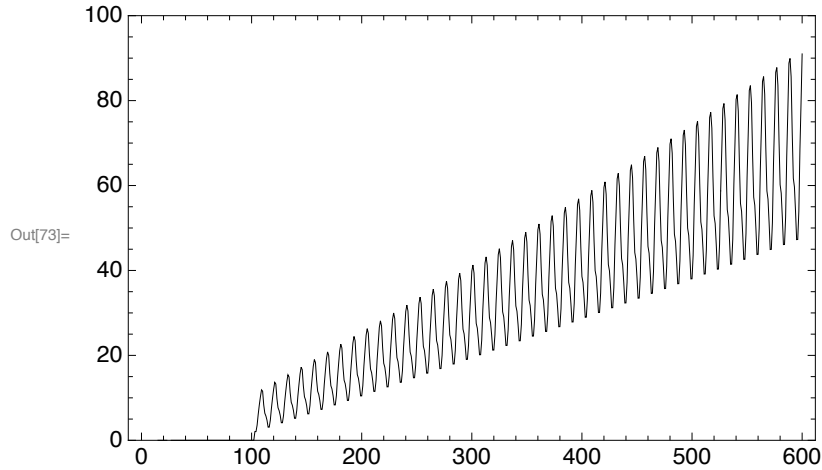
Obtaining Monthly Values

Printing Results

Plotting

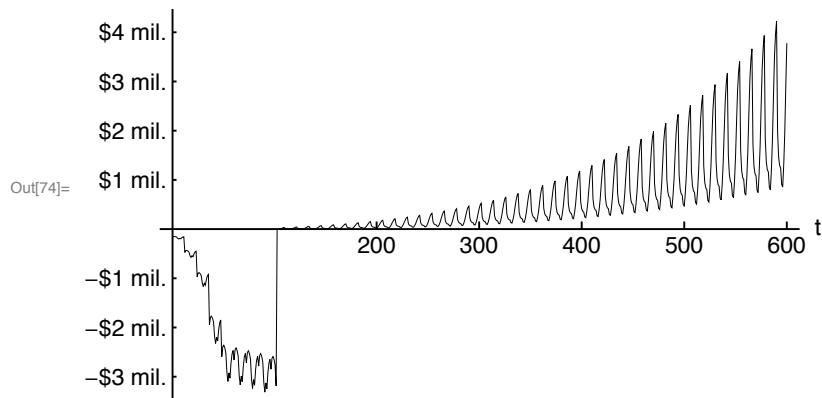
Percent of Reservoir Used

```
In[73]:= p1=ListPlot[mnth[[7]],PlotRange->{0,100},
Joined->True,
Frame->True]
```



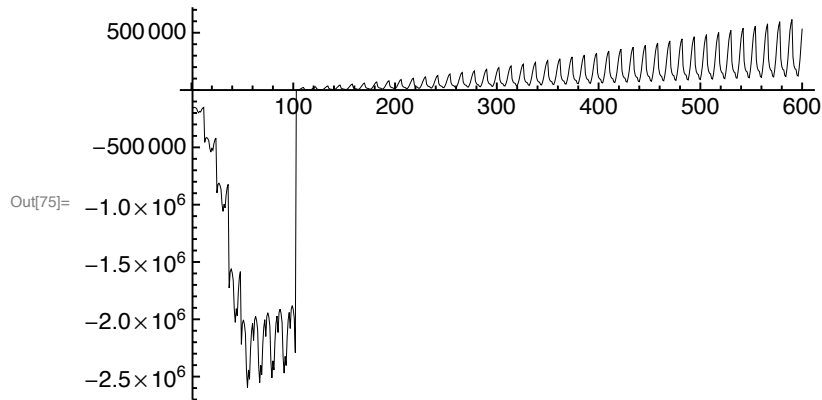
Current (Undiscounted) Value

```
In[74]:= p1=ListPlot[mnth[[6]],
Ticks->{{200,300,400,500,600},
{{-3*10^6,"-$3 mil.",{0.00625,0.},{black,medum}},
{-2*10^6,"-$2 mil.",{0.00625,0.},{black,medum}},
{-1*10^6,"-$1 mil.",{0.00625,0.},{black,medum}},
{1*10^6,"$1 mil.",{0.00625,0.},{black,medum}},
{2*10^6,"$2 mil.",{0.00625,0.},{black,medum}},
{3*10^6,"$3 mil.",{0.00625,0.},{black,medum}},
{4*10^6,"$4 mil.",{0.00625,0.},{black,medum}}}},
PlotRange->All,AxisLabel->{"t",""},
Joined->True]
```

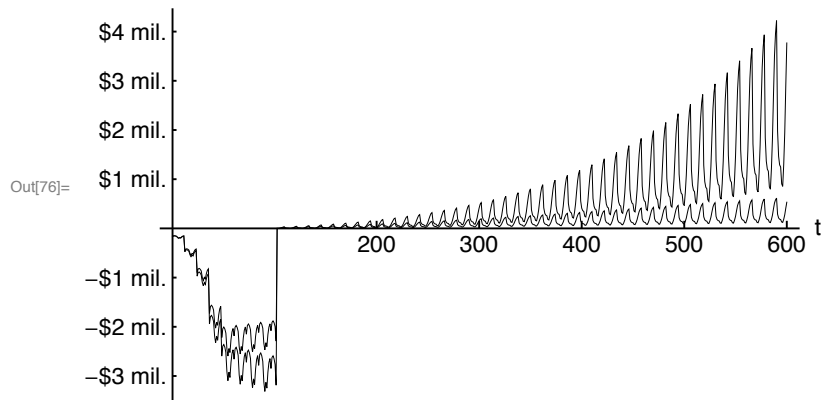


Present (discounted) Value

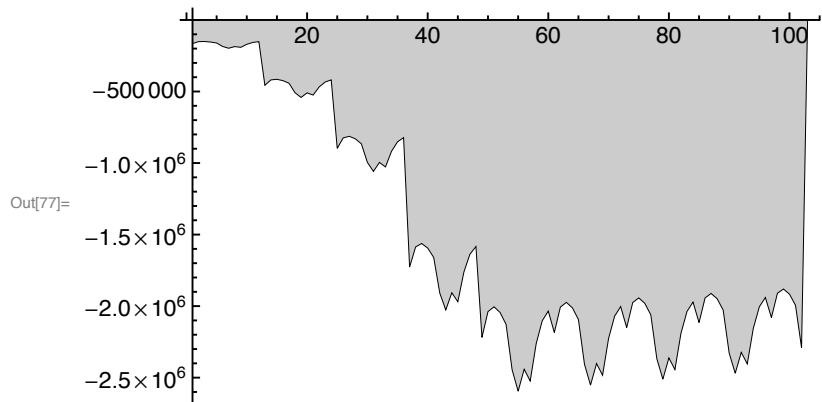
```
In[75]:= p2=ListPlot[mnth[[8]],PlotRange->All,Joined->True]
```



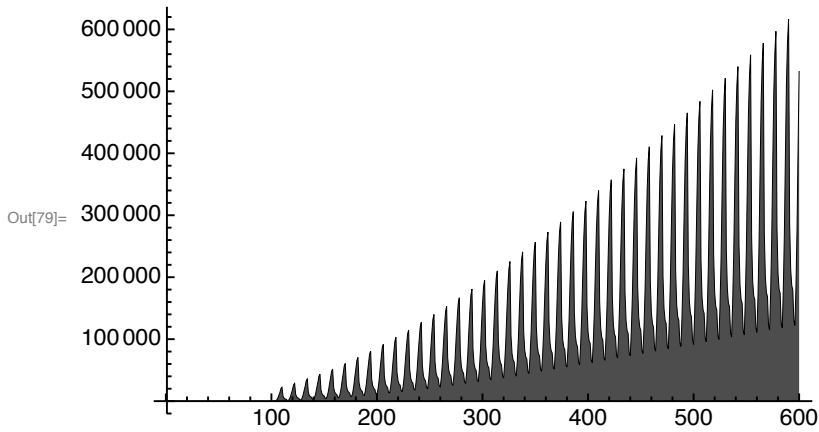
```
In[76]:= Show[p1,p2]
```



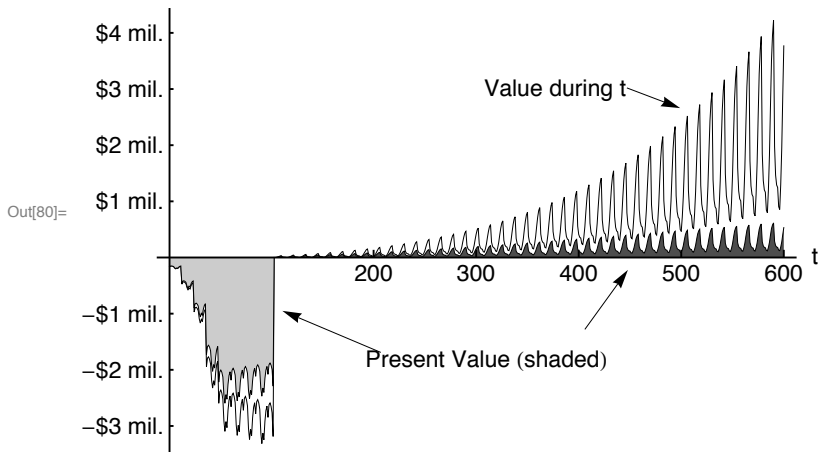
```
In[77]:= fp1 = ListPlot[Take[mnth[[8]], 103],
  PlotRange -> All, Filling -> Axis, FillingStyle -> LGray, Joined -> True]
```



```
In[78]:= posonly = Join[Table[0, {102}], Take[mnth[[8]], {103, 600}]];
fp2 = ListPlot[posonly, PlotRange -> All,
  Filling -> Axis, FillingStyle -> BGray, Joined -> True]
```



```
In[80]:= p175 = Show[p1, fp1, fp2,
  Graphics[Text["Value during t", {377., 300 * 10^4}]],
  Graphics[Text["Present Value (shaded)", {310., -180 * 10^4}]],
  Graphics[{Arrowheads[0.03], Arrow[{{207., -169 * 10^4}, {111., -95 * 10^4}}]}],
  Graphics[{Arrowheads[0.03], Arrow[{{406., -128 * 10^4}, {448., -22 * 10^4}}]}],
  Graphics[{Arrowheads[0.03], Arrow[{{447., 302 * 10^4}, {499., 266 * 10^4}}]}],
  ImageSize -> 384, AspectRatio -> 0.7
]
```



```
In[81]:= Export["fig75.eps", p175, "EPS"]
```

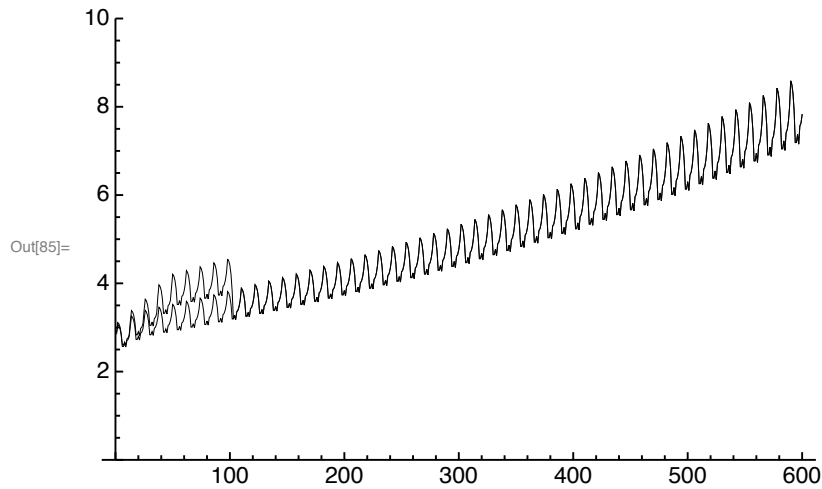
Out[81]= fig75.eps

```
In[82]:= "fig74.eps"
```

Out[82]= fig74.eps

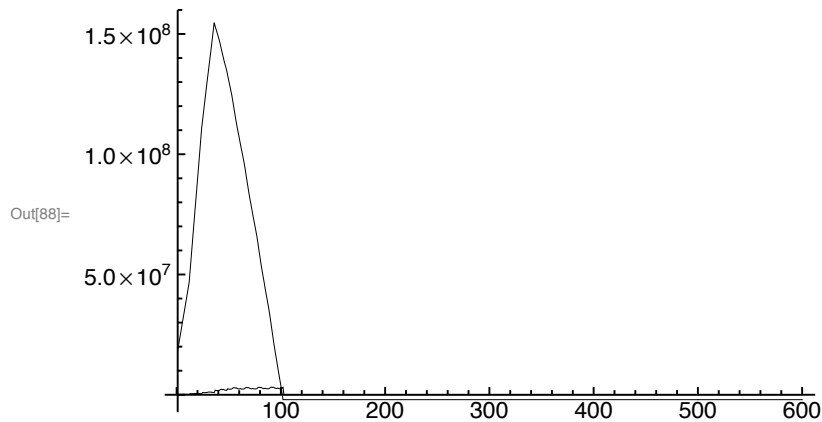
With and Without Prices

```
In[83]:= pp1=ListPlot[mnth[[2]],PlotRange->{0,10},Joined->True];
pp2=ListPlot[mnth[[3]],PlotRange->{0,10},Joined->True];
Show[pp1,pp2]
```



Added Revenue and Unpaid Costs

```
In[86]:= pp1=ListPlot[mnth[[10]],PlotRange->All,Joined->True];
pp2=ListPlot[mnth[[11]],PlotRange->All,Joined->True];
Show[pp1,pp2]
```



Demand and Surplus Illustration

```

In[89]:= Plot[{{(10^6)*q/kt[[1]]^(1/elast[[1]]),
  ((10^6)*q/kt[[589]]^(1/elast[[1]])),
  {q,1.,8.},
  PlotRange->{0.,10},
  PlotLabel->"January Year 1 vs. Year 50",
  AxesLabel->{"mil gal", "$"},
  GridLines->{{wosupply[[1]]/10^6,wsupply[[1]]/10^6},
  {mnth[[2,1]],mnth[[3,1]],mnth[[2,589]]}}]

```

January Year 1 vs. Year 50

